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Judul artikel Jurnal Penulis	: Building a culture of safety: Teacher and peer impact on safety behaviors among vocational high school students
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No.	Perihal	Tanggal
1.	Bukti konfirmasi submit artikel dan artikel yang disubmit	3 Januari 2024
2.	Bukti konfirmasi review dan hasil review pertama	23 Januari 2024
3.	Bukti konfirmasi submit revisi pertama, respon kepada reviewer, dan artikel yang diresubmit	3 Februari 2024
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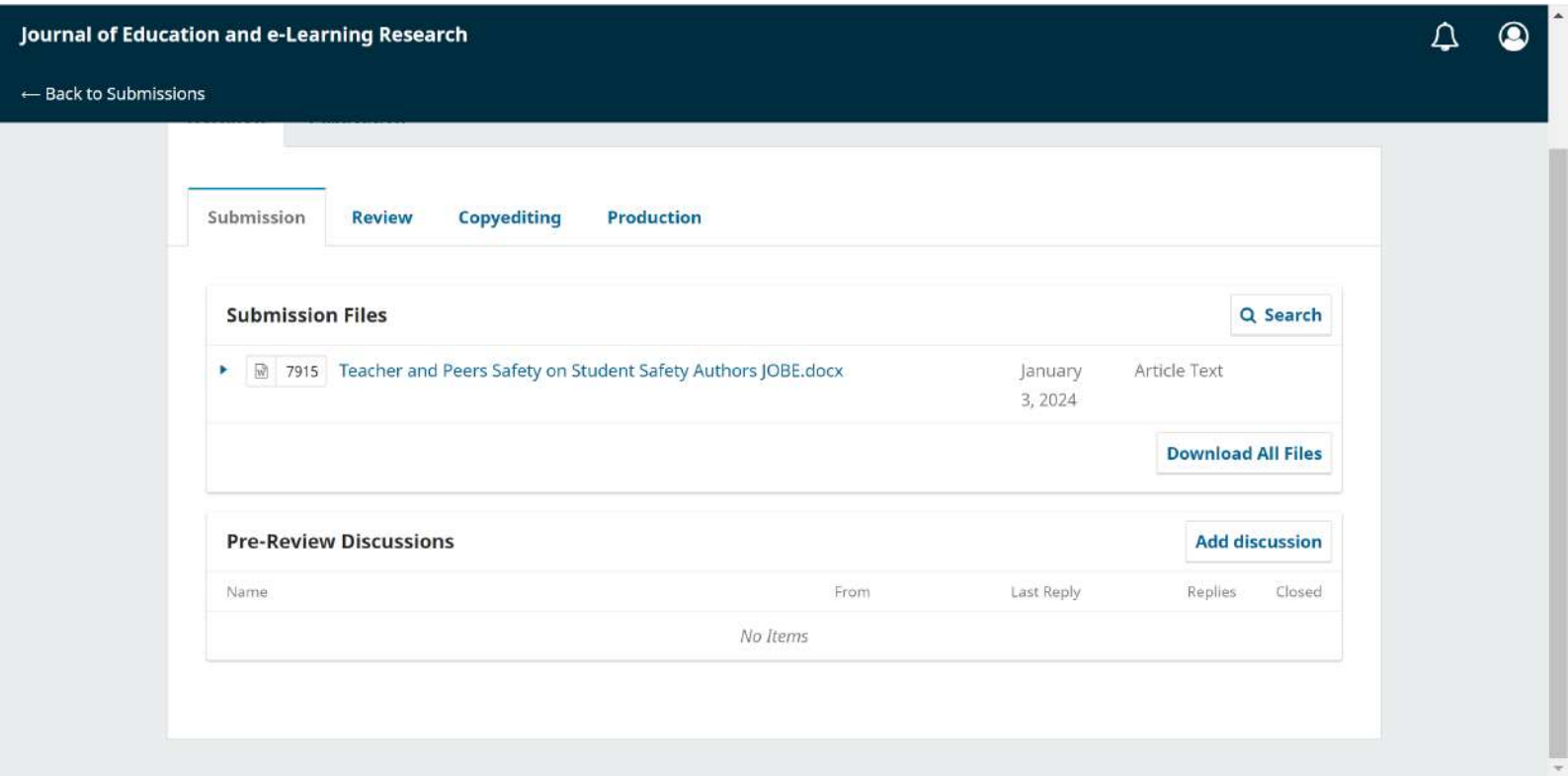
1. Bukti konfirmasi submit artikel dan artikel yang disubmit (3 Januari 2024)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2. **Bukti konfirmasi review dan hasil review pertama (23 Januari 2024)**

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DR. DARMAWANG, M.Kes UNM <darmawang@unm.ac.id>

Editorial Decision: Article ID- 2283/JEELR

Asian Online Journal Publishing Group <editor@asianonlinejournals.com> 23 Januari 2024 pukul 19.08
Kepada: darmawang@unm.ac.id
Cc: amiruddin@unm.ac.id, jumadin@unm.ac.id, wirawans@unm.ac.id

Title: Building a Culture of Safety: Teacher and Peer Impact on Safety Behaviors among Vocational High School Students.

Journal: Journal of Education and e-Learning Research.

Dear Darmawang

Reviewers have now commented on your paper. You will see that there are several issues that need to be addressed before the paper can be accepted for publication by Journal of Education and e-Learning Research. Please find in attachment referees' comments.

We ask that you give the comments raised by the referees your careful consideration and that you submit a revised version of your manuscript as well as an itemized reply to each of the reviewers' comments. Please make sure to mark all changes in a different color. You have one week to submit your revised file.

If you decide to revise the work, please submit a list of changes or a rebuttal against each point which is being raised when you submit the revised manuscript.

Please send us your revised paper through this email attachment.

I am looking forward to receiving your revised manuscript!

Yours sincerely,

Sara Lim
Managing Editor

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Reviewers comments 2283-JEELR.pdf
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Journal of Education and e-Learning Research
[E] ISSN: 2410-9991
[P] ISSN: 2518-0169

Title: Building a Culture of Safety: Teacher and Peer Impact on Safety Behaviors among Vocational High School Students

Article. No. 2283

Reviewers Comments

- The current research aims to investigate factors affecting students' safety behaviors using knowledge-attitude-behavior model within stimulus-organism-response frameworks.
- A total of 959 Indonesian vocational high school students that had undergone half of their learning process in workshop that makes them at risk of having accidents.
- Similar results were also shown by peer's safety behaviors that has significant and positive effect on student safety knowledge, attitude, and behavior.

1. The abstract includes the following details: Purpose, Design/Methodology/Approach, Findings, and Conclusion in order. However, add detail about research design and methodology.
2. Add research significance and research questions at the end of introduction.
3. Literature review will be added properly before methods. Please critically evaluate and relate recent studies to highlight the research gap.
4. Please include more information about the participants, methodology and data analysis. Provide the names of colleges/university/schools from where sample was chosen for data collection.
5. Rewrite the methodology section to include the following in detailed manner and with headings: research design, research population, instrument, validity and reliability tests.
6. Please add a table to include all demographic details of participants. Give the data source, the names of affiliated institutions of participants for validation purpose.
7. In methodology, please elaborate the research design and details about the research design.
8. Results are presented properly.
9. Conclusion is appropriate.
10. It is recommended to cite academic research papers published in journals. Please use only English language to write references.
11. Please cite the references of website in APA style. It is suggested to cite only from published academic journals.

It is advisable to make major modifications before publication.

Journal of Education and e-Learning Research
[E] ISSN: 2410-9991
[P] ISSN: 2518-0169

Editorial Comments

1. There is human participation within paper. Please provide the ethical approval information in the following format.
2. Institutional Review Board Statement: The Ethical Committee of the [institute/ University name], COUNTRY has granted approval for this study on DATE..... (Ref. No. .....).

3. **Bukti konfirmasi submit revisi pertama, respon kepada reviewer, dan artikel yang diresubmit (3 Februari 2024)**

UNM

DR. DARMAWANG, M.Kes UNM <darmawang@unm.ac.id>

Editorial Decision: Article ID- 2283/JEELR

DR. DARMAWANG, M.Kes UNM <darmawang@unm.ac.id> 3 Februari 2024 pukul 07.11
Kepada: Asian Online Journal Publishing Group <editor@asianonlinejournals.com>

Subject: Submission of Revised Manuscript and Response to Reviewer Comments

Dear JEELR Editorial Team,

I hope this email finds you well. I would like to express my gratitude for the valuable feedback provided by the reviewers on my manuscript titled "Building a Culture of Safety: Teacher and Peer Impact on Safety Behaviors among Vocational High School Students" submitted to the Journal of Education and e-Learning Research.

Please find attached the revised version of the manuscript, along with a detailed response to each of the reviewers' comments in the document titled "Letter as Response to Reviewer." We have carefully considered and addressed the issues raised by the referees, incorporating nearly all suggested improvements into the revised manuscript.

To facilitate the review process, I have marked all the changes in a different color within the revised manuscript. Additionally, a summary of the major modifications and a rebuttal against each point raised by the reviewers are provided in the response letter.

I trust that these revisions address the concerns raised by the reviewers and enhance the overall quality of the manuscript. I appreciate the time and effort invested by the reviewers in providing constructive feedback.

Thank you for the opportunity to submit a revised version, and I am hopeful that the updated manuscript will meet the standards for publication in the Journal of Education and e-Learning Research.

Please feel free to contact me if any further clarification or information is required.

Sincerely,

Dr. Darmawang Universitas Negeri Makassar Email: darmawang@unm.ac.id
[Kutipan teks disembunyikan]

2 lampiran

Building a Culture of Safety (revised version).docx
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Letter as Response to Reviewer (JEELR).docx
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Response to Reviewers

Dear Editor,

We appreciate you and the reviewers for your precious time in reviewing our paper and providing valuable comments. It was your valuable and insightful comments that led to possible improvements in the current version. The authors have carefully considered the comments and tried their best to address every one of them. We hope the manuscript after careful revisions meet your high standards. The authors welcome further constructive comments if any.

Below we provide the point-by-point responses. All modifications in the manuscript have been highlighted in red.

Sincerely,

Authors

Response to Reviewer 1

[Comment 1] The abstract includes the following details: Purpose, Design/Methodology/ Approach, Findings, and Conclusion in order. However, add detail about research design and methodology.

Response: Thank you for pointing these out. We have added detail on research design.

[Comment 2] Add research significance and research questions at the end of introduction.

Response: Thank you for pointing this out. However, we have included the research significance and research questions at the end of introduction, just before the theoretical framework.

[Comment 3] Literature review will be added properly before methods. Please critically evaluate and relate recent studies to highlight the research gap.

Response: The literature review is part of our introduction section. There were related recent studies that has been discussed and used to highlight the research gap such as (Abdullah et al., 2020; Abdullah & Aziz, 2020; Dombrowski & Hagelberg, 1985; Jung et al., 2000)

[Comment 4] Please include more information about the participants, methodology and data analysis. Provide the names of colleges/university/schools from where sample was chosen for data collection.

Response: Thank you for pointing this out. However, our participants come from more than 20 vocational high schools in south and west Sulawesi. In our point of view, mentioning all of these schools will be ineffective. That is the reason why we just mentions that our participants are vocational high school students from south and west Sulawesi.

[Comment 5] Rewrite the methodology section to include the following in detailed manner and with headings: research design, research population, instrument, validity and reliability tests

Response: Thank you for pointing this out. We have rewrite the methodology accordingly.

[Comment 6] Please add a table to include all demographic details of participants. Give the data source, the names of affiliated institutions of participants for validation purpose.

Response: We just include a limited demographic details of participants in our study. It makes us to prefer to directly narrate the demographic details than arrange them in table.

[Comment 7] In methodology, please elaborate the research design and details about the research design.

Response: Thank you for your valuable comment. We have revised the manuscript accordingly.

[Comment 8] It is recommended to cite academic research papers published in journals. Please use only English language to write references.

Response: Thank you for your valuable comment. We have revised the manuscript accordingly.

[Comment 9] Please cite the references of website in APA style. It is suggested to cite only from published academic journals.

Response: Thank you for your valuable comment. We used reference manager to manage our citation to make sure that our manuscript has met your suggestions.

Building a Culture of Safety: Teacher and Peer Impact on Safety Behaviors among Vocational High School Students

Abstract

Young employees face greater risk of workplace accidents. Moreover, the higher prevalence of accidents was shown by academic laboratory. Occupational health and safety (OHS) education plays a central role in reducing the risk of accidents which aims to habituate safety behavior in educational settings. The current research aims to investigate factors affecting students' safety behaviors using knowledge-attitude-behavior model within stimulus-organism-response frameworks. The study was quantitative non experimental by sending electronic questionnaire to a total of 959 Indonesian vocational high school students that had undergone half of their learning process in workshop that makes them at risk of having accidents. A structural equation model had been conducted on the data and shows that teacher OHS leadership encourage student safety knowledge, attitude, and behavior. Similar results were also shown by peer's safety behaviors that has significant and positive effect on student safety knowledge, attitude, and behavior. Among predictors, OHS knowledge showed the highest influence on student's safety behavior. The current research findings provide evidence that supports the fact that student safety behavior follows Knowledge-Attitude-Behavior Model within Stimulus-Organism-Response Framework.

Keywords: Teacher Safety Leadership, Peers' Safety Behavior, Students' Safety Behavior, KAB model, SOR framework.

Introduction

Occupational health and safety are of utmost importance in the workplace and laboratory. It ensures the protection of workers' health and well-being, preventing occupational injuries, illnesses, and fatalities (Feszterová, 2014; Michalak, 2002; Ramos et al., 2014). Among all age groups, young employees are inclined to face a greater susceptibility to workplace accidents, with a risk level that is approximately 25-40% higher when contrasted with others (Verjans, 2007). The reasons beyond this phenomenon is that young employees often downplay the risks involved and perceive accidents as an inherent aspect of their job routine (Tucker & Turner, 2013; Turner et al., 2015). Moreover, the accidents have higher prevalence in academic laboratories than that in workplace or industry (Al-Obaidi et al., 2018; Lestari et al., 2019; Steward et al., 2016). To overcome the problems, occupational health, and safety (OHS) education has been conducted in college to shape students OHS behavior.

Student's occupational health and safety as human behaviors are influenced by the dynamic interplay of individual factors, behavior, and the surrounding environment, as described by the concept of triadic reciprocal determinism (Bandura, 1986). Behavior-related variables can be investigated through psychological frameworks. Prior research on occupational health and safety has been conducted using psychological frameworks (Johnson & Hall, 2005; Liu & Zheng, 2019; Milton & Mullan, 2012; Perdana, 2021).

Research conducted by (Dombrowski & Hagelberg, 1985) investigate the effects of safety unit as intervention on student safety knowledge and safety behavior. The participants of the study were 333 biology and chemistry students. The findings show that the safety unit as stimuli has significant and positive effect on student safety knowledge and behavior. (Jung et al., 2000) conducted experimental research on 62 elementary school students using school safety education as research interventions. The study concluded that students with safety education show higher scores of indoor and outdoor safety behaviors than those with no safety education. The more recent research by (Abdullah et al., 2020) investigates the effects of safety climate on safety behavior using safety knowledge as moderation variable. The research findings are in line with stimulus-organism-response framework. In the context of the study, safety climate as stimuli affects the organism safety knowledge and safety behavior. However, these studies do not explicitly utilize the SOR framework.

Research on student safety behavior using SOR framework has been conducted by (Abdullah & Aziz, 2020). Using responses of 361 college students, the study found that safety leadership as stimuli has positive effects on safety knowledge, safety motivation, and safety behavior. However, the study was only focused on safety leadership as stimuli which may also be regarded as organism since it was measured students' safety leadership. The current research includes teachers' safety leadership and peers' safety behavior as stimuli. Including teacher safety leadership and peer's safety behavior into the model will provide a comprehensive understanding because occupational health and safety education is carried out in schools where interactions occur not only with teachers, but also with peers.

Moreover, the organism and response part will be integrated with the knowledge-attitude-behavior model as study conducted by (Zulkifly, 2020) having empirical research on safety behavior of manufacturer workers. Knowledge and attitude, the processes that occur within students, will be

part of the organism while behavior as an outcome of both knowledge and attitude becomes part of responses. Extending the previous SOR framework of students' safety behavior will provide comprehensive understanding of students' safety behaviors and its predictors.

Based on the previous explanation, this research aims to provide comprehensive understanding on the factors that impact students' safety behavior. The research questions to be addressed in this study are as follows:

1) Does teacher safety leadership affect students' safety knowledge, attitudes, and behaviors?
2) Does peers' safety behavior affect students' safety knowledge, attitudes, and behaviors?
3) Does students' safety behavior follow knowledge-attitude-behavior model?
4) Among these factors, which ones shows the strongest effect on students' safety behaviors?

Theoretical Framework

Stimulus-Organism-Response Framework

S-O-R is a popular framework used to understand the influence of environment and behavioral intention (Islam et al., 2021) in decision-making to perform certain behaviors . This framework has been widely used in various fields, including education, to understand and explain human behavior in response to different stimuli (Baharuddin et al., 2023; Pandita et al., 2021; Shanshan & Wenfei, 2022; J. Yang et al., 2021, 2022; S. Yang et al., 2019). The framework draws its foundation from the work of (R S Woodworth, 1929), extending (Pavlov, 1927) of stimulus-response model, who envisioned behavior as taking place within an environment comprising various stimuli.

SOR consists of stimulus, organism, and response. (Skinner, 1935) described the concept of stimulus and response as integral components of behavior and the environment. Change in the environment can have an impact on an individual's psychological and emotional well-being, subsequently leading to changes in their behavior (Donovan & Rossiter, 1982).

A stimulus is defined as an external factor that impacts an individual's mental or psychological state (Woodworth & Marquis, 2014). The current research uses teacher safety leadership and peers' safety behaviors as stimuli. Previous research by (Sebastian et al., 2016) found that teachers' leadership have significant and positive effect on student learning and behavior. Other research

also indicates that peers' behavior may affect one's behavior (Amialchuk & Kotalik, 2016; Charroin et al., 2022).

Organism is defined as things that may shape an individual's perceptions, emotions, and cognitions (Bagozzi, 1986) whereas responses are defined as the reactions of individuals that are influenced by environmental factors (Zheng et al., 2020), encompassing both behavioral and psychological responses. As an individual's cognition and perception, knowledge and attitude are parts of 'organism'. Individual's reactions to these cognition and perception are in the form of behavioral change.

Knowledge-Attitude-Behavior Model

The knowledge-attitude-behavior (KAB) model is a theoretical framework that explains the relationship between knowledge, attitudes, and behaviors. It suggests that knowledge and attitudes influence behavior, and that behavior change can be achieved by targeting these factors (Fabrigar et al., 2006).

According to the KAB model, knowledge serves as the foundation for behavior change. When individuals possess accurate and relevant knowledge about a particular topic, they are more likely to engage in behaviors that align with that knowledge (Fabrigar et al., 2006). Attitudes, on the other hand, refer to individuals' evaluations or feelings towards a particular behavior or topic. Attitudes can be positive or negative and can influence behavior by shaping individuals' intentions and motivations (Fabrigar et al., 2006).

The relationship between knowledge and attitude comes from (Krosnick & Petty, 1995) definition. Knowledge is a characteristic of one's attitudes, determined by the quantity of beliefs and experiences associated with that attitude in memory, as well as the intensity of the connections between these beliefs or experiences and the attitude itself (Krosnick & Petty, 1995)

Behavior, the final component of the KAB model, refers to the actions or conduct of individuals. Behavior is influenced by both knowledge and attitudes. When individuals have accurate knowledge and positive attitudes towards a behavior, they are more likely to engage in that behavior (Fabrigar et al., 2006).

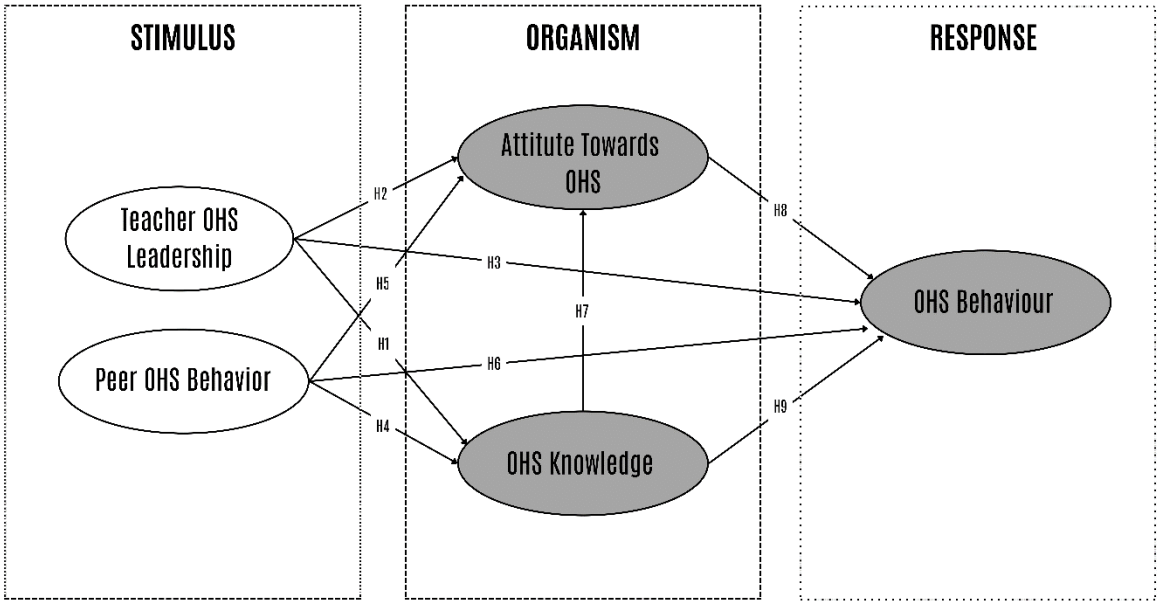

Fig 1. Integrating Knowledge-Attitude-Behavior (KAB) Model on SOR Framework to explain the student decision-making on OHS-related behavior. Gray variables are parts of KAB model.

The KAB model suggests that behavior change can be achieved by targeting knowledge and attitudes. By providing individuals with accurate information and promoting positive attitudes towards desired behaviors, interventions can effectively promote behavior change (Schrader & Lawless, 2004).

Methods

Research Design

The research was quantitative non-experimental study conducted in Indonesia during January to February 2023. Cross-sectional data was collected by sending an electronic survey to 1000 vocational high school students in South and West Sulawesi, Indonesia. Of those students, 959 completely fill the questionnaire.

Research Population

The research population of the study was vocational high school students in south and west Sulawesi, two provinces in Indonesia. Vocational high school students were chosen because they undergo upper secondary education with theoretical and practical subjects carried out in the workshop. This makes them at risk of having an accident while learning in the workshop. Among participants, 62.8% (602) were male and 37.2% (357) were female. The proportions were

significantly equal with global youth employment based stating that female young employee are 39.6% among all youth employee (Dasgupta, 2022).

The data gathered was prepared and analyzed using structural equational modelling with partial least square method of parameter estimation (PLS-SEM). PLS-SEM is the preferred method use in complex model with high number of variables (Akter et al., 2017; Hair et al., 2021).

The minimum sample in PLS-SEM can be determined using *rule of thumbs* stated that the number of sample should be 10-fold of model indicators (Shmueli et al., 2019). The number of indicators used in the instruments is equal to 29, reflecting that the minimum sample should be 290 students. Since the study participants more than 290, the sample size of the study is adequate.

Instruments

Teacher Safety leadership

Teacher safety leadership data were collected using *Safety Leadership Scale* (Çalış & Büyükakinci, 2019; T.-C. Wu, 2005) which has three factors of safety coaching, safety caring and safety controlling ($Cronbach\ \alpha > 0.9$). However, the study only uses nine items, three items on each factor, to reduce the bias produced from a long survey.

Safety Knowledge

Student safety knowledge data were gathered using *safety knowledge scale* developed by (Basahel, 2021) ($Cronbach's\ \alpha = 0.86$). The scale consists of six items.

OHS Perceived of Usefulness

OHS Perceived of usefulness of students were collected using self-developed scale based on usefulness framework (Hendrickson et al., 1993) with three main reasons for safety: humanitarianism, law, and cost (Sapuan et al., 2022). The scale consists of six items reflecting these three main reasons.

Attitude towards OHS

The attitude towards OHS was self-developed using ABC (Affective-Behavioral-Cognitive) framework of attitude. Based on ABC framework, attitude is the combination of cognition,

emotion, and behavior (Solomon, 2017). The self-developed questionnaire consists of three items representing these three parts of attitude.

OHS Behavior

The study uses *Safety Behavioral Scale* (Neal et al., 2000; Uzuntarla et al., 2020) to measure the student OHS behavior. The scale consists of six items reflecting two factors of safety compliance ($Cronbach's\ \alpha = 0.90$) and safety participation ($Cronbach's\ \alpha = 0.82$).

Validity and Reliability Test

Since the relationship between variables were analyzed using PLS-SEM, the validity and reliability test will also included in PLS-SEM measurement model. The measurement model investigated construct reliability, convergent validity, discriminant validity of items and constructs in the study (Sarstedt, Hair, et al., 2022; Sarstedt, Ringle, et al., 2022)

Results

The results of the current research will be provided in three subsections: (1) descriptive statistics and correlations, (2) measurement model, and (3) structural models. The last two subsections are part of structural equation modelling (Hair et al., 2019, 2021).

Descriptive Statistics and Correlations

Table 1 displays descriptive statistics of participants response on each scale and correlations between scales. On average, participants showed highest responses on attitude scale ($M = 8.35, SD = 1.79$) and lowest responses on peers' safety behavior ($M = 7.89, SD = 2$). Other scales are higher than 8: (1) teacher OHS leadership ($M = 8.26, SD = 1.87$), (2) safety knowledge ($M = 8.08, SD = 1.87$), and (3) students' safety behavior ($M = 8.06, SD = 1.89$).

Table 1. Descriptive statistics and correlations between variables

Variable	M	SD	Correlations							
			1		2		3		4	
1. Teacher OHS Leadership	8.255	1.866	—							
2. Peers' Safety Behavior	7.887	2.006	0.796	***	—					
3. Safety Knowledge	8.081	1.874	0.778	***	0.781	***	—			
4. Attitude towards OHS	8.354	1.793	0.801	***	0.747	***	0.834	***	—	
5. Students' Safety Behavior	8.059	1.893	0.74	***	0.744	***	0.799	***	0.794	***

* p < .05, ** p < .01, *** p < .001

As part of the analysis, the relationship between variables will be investigated through bivariate statistics of spearman correlations. As endogen variable, students' safety behavior has significant and positive correlations with teacher OHS leadership ($r = 0.74, p < .001$), peers' safety behavior ($r = 0.744, p < .001$), safety knowledge ($r = 0.799, p < .001$), and attitude towards OHS ($r = 0.794, p < .001$). Attitude towards OHS also shows significant and positive correlations with teacher OHS leadership ($r = 0.801, p < .001$), peers' safety behavior ($r = 0.747, p < .001$), safety knowledge ($r = 0.834, p < .001$). The last endogen variable, safety knowledge, displays significant and positive correlations with exogen variables: teacher OHS leadership ($r = 0.778, p < .001$) and peers' safety behavior ($r = 0.781, p < .001$).

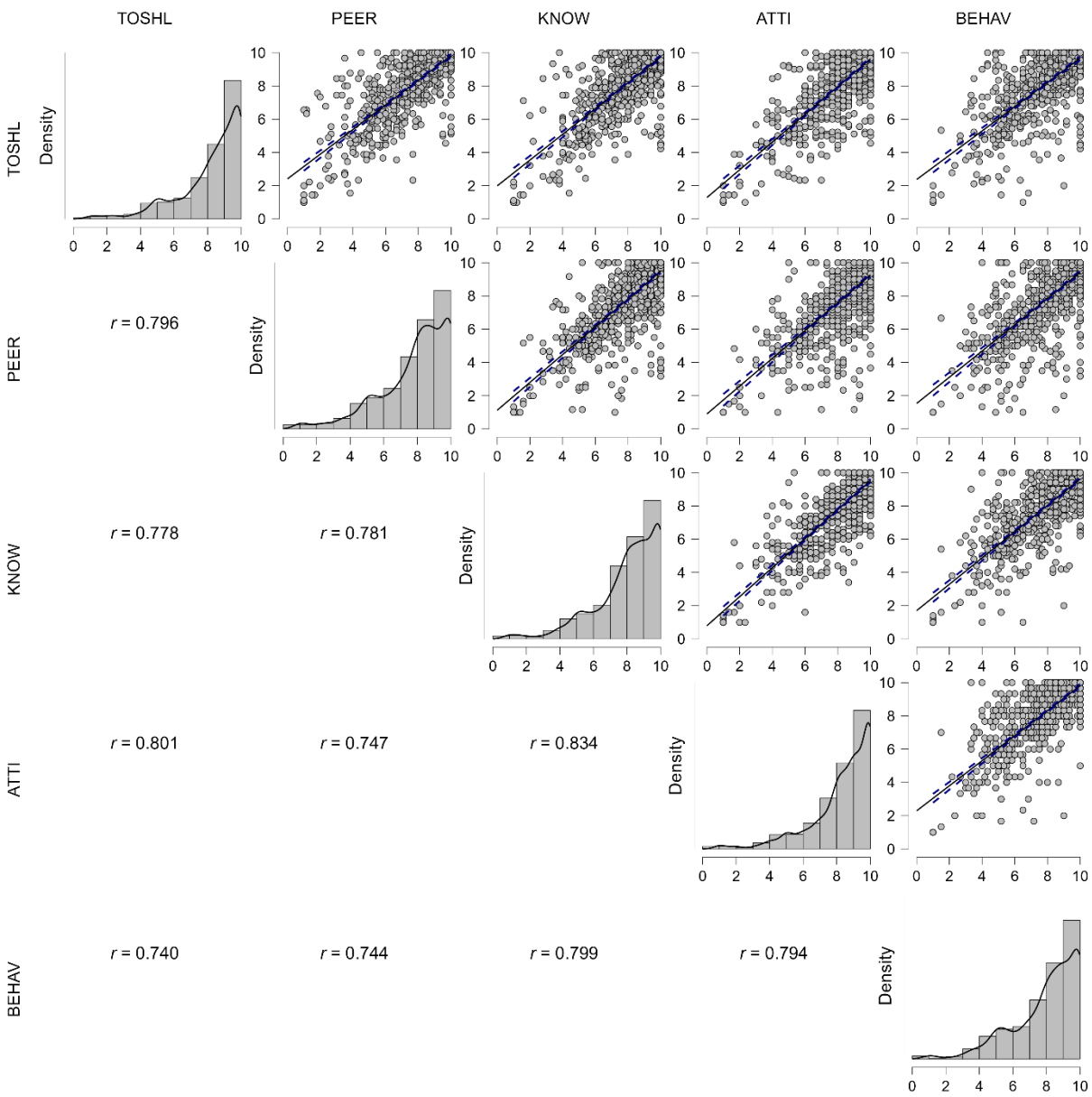

Fig 2. Correlations matrix of variables in the student OHS behavior model. TOHSL: teacher OHS leadership, PEER: peers' safety behavior, KNOW: OHS knowledge, ATTI: attitude towards OHS, BEHAV: students OHS behavior.

The bivariate statistics indicate that the data provides evidence to support KAB model and SOR frameworks. KAB-related variables display the highest correlations each other's and two stimulus show significant correlations with KAB-related variables.

Measurement models

Measurement models in PLS-SEM aims to investigate the reliability and validity of items and constructs used in the model (Hair et al., 2020; Hanafiah, 2020). Tabel 2 displays some metrics used to evaluate the reliability and validity of items and constructs.

Table 3. Reliability and Validity of constructs

Variable	Cronbach's α	AVE	HTMT
Teacher Safety Leadership	0.952	0.723	0.875
Peer Safety Leadership	0.953	0.811	0.813
OHS Knowledge	0.935	0.793	0.898
Attitude towards OHS	0.884	0.813	0.898
OHS Behavior	0.942	0.776	0.87

Table 3 provides Cronbach Alpha, average variance extracted (AVE), and Heterotrait Monotrait criterion of each construct. Cronbach α is a measure of construct reliability which has rule-of-thumbs of a minimum 0.708 (Hair et al., 2021). All variables used in the model displays Cronbach α lies between 0.884 and 0.953 which is higher than 0.708 meaning that they have adequate internal consistency. In other words, they can consistently be used to measure a specific psychological state (Henseler, 2021).

Average variance extracted, or AVE, serves as a consolidated measure of convergence, computed by aggregating the variance extracted from all items associated with a particular construct (Hair et al., 2017). A minimum variance extracted by the joint items of the construct should be at least 0.5 or 50% (Ghasemy et al., 2020). The AVE of the variables of the model lies between 0.723 and 0.811 which leads to the conclusion that all variables have sufficient construct validity.

The last metrics to examine in measurement model is HTMT. HTMT, or Heterotrait monotrait criterion, is used to assess the discriminant validity of the constructs. This type of validity ensures that each construct is distinct in empirical terms and captures a phenomenon that is not duplicated by other constructs within a statistical model (Franke & Sarstedt, 2019). Since it distinguishes a construct with other constructs in the model, the rule of thumbs of HTMT was a maximum value of 0.9 (Henseler et al., 2015). The last column of table 3 displays the maximum HTMT criterion of a construct with other constructs. The maximum HTMT criterion of the constructs falls within the range of 0.813 to 0.898 which fulfills the rule-of-thumbs. These indicate that each construct used in this study is a unique construct and measure different variables.

Structural Model

After carefully examining the measurement model and having concluded that all constructs are valid and reliable, the next step of SEM is investigating the structural model (Lin et al., 2020). Structural model is conducted to investigate the significance of path coefficients between variables (Cepeda-Carrion et al., 2019; Grace & Bollen, 2008) using bootstrapping methods with a minimum of 5000 replications (Streukens & Leroi-Werelds, 2016). Table 4 displays the results of structural model investigations.

Table 4. Direct, Indirect, and Total Effect of Variables

Hypothesis	Path	Effect (Path Coefficient)			f^2
		Direct	Indirect	Total	
H1	TOHSL -> KNOW	0.432 ***		0.432***	0.21
H2	TOHSL -> ATTI	0.36 ***	0.217 ***	0.576***	0.161
H3	TOHSL -> BEHAV	0.082 ***	0.323 ***	0.405***	0.006
H4	PEER -> KNOW	0.437 ***		0.437***	0.216
H5	PEER -> ATTI	0.067 ***	0.22 ***	0.287***	0.006
H6	PEER -> BEHAV	0.188 ***	0.232 ***	0.42***	0.036
H7	KNOW -> ATTI	0.502 ***		0.502***	0.336
H8	KNOW -> BEHAV	0.32 ***	0.161 ***	0.481***	0.086
H9	ATTI -> BEHAV	0.321 ***		0.321***	0.086

*) p<.05, **) p<.01, ***) p<.001. TOHSL: teacher OHS leadership, PEER: peers' safety behavior, KNOW: OHS knowledge, ATTI: attitude towards OHS, BEHAV: students OHS behavior.

The bootstrapping on path coefficient (table 4) shows that teacher OHS leadership has significant and positive effect on students OHS knowledge ($\beta = 0.432, p < .001$), attitude towards OHS ($\beta = 0.576, p < .001$), and students safety behavior ($\beta = 0.405, p < .001$). Based on (Cohen, 2012) classification on effect size, teacher OHS leadership has moderate effect size on OHS knowledge ($f^2 = 0.21$) and attitude towards OHS ($f^2 = 0.161$). On the other hand, teacher OHS leadership shows small effect size on student OHS behavior ($f^2 = 0.006$).

The study findings also indicate that peers' safety behavior also has significant and positive effect on students OHS knowledge ($\beta = 0.437, p < .001$), attitude towards OHS ($\beta = 0.287, p < .001$), and students safety behavior ($\beta = 0.420, p < .001$). The effect size of peers' safety behavior are moderate on students OHS knowledge ($f^2 = 0.216$) and students' safety behavior ($f^2 = 0.036$), and small on students' safety behavior ($f^2 = 0.006$).

The findings also provides evidence to support the KAB model on student safety behavior. Student OHS knowledge has significant and positive effect on attitude towards OHS ($\beta = 0.502, p < .001$) and students' safety behavior ($\beta = 0.481, p < .001$). Similar result is also shown by student

attitude towards OHS displaying significant and positive effect on students' safety behavior ($\beta = 0.321, p < .001$). Student OHS knowledge has medium effect size on attitude towards OHS ($f^2 = 0.336$) and students' safety behavior ($f^2 = 0.086$). The medium effect size is also shown by the path between attitude towards OHS and students' safety behavior ($f^2 = 0.086$).

Based on table 4, the strongest direct effects on students' safety behavior are shown by student's OHS knowledge and attitude towards OHS. Using total effect, student's OHS knowledge also provides the largest total effect on student's safety behaviors. By focusing current study findings on exogenous variables (stimuli), teacher OHS leadership has stronger effects on students' safety related Knowledge-Attitude-Behavior, especially on attitude towards OHS.

Discussion

The current research aims to provide empirical evidence on factors affecting student safety behavior in academic laboratories or workshops. The factors are derived from knowledge-attitude-behavior model in stimulus-organism-responses framework. The findings of the current research will give comprehensive understanding on student decision-making to execute safety behaviors when they attend laboratory or workshop classes.

Teacher OHS Leadership Effects

Teacher safety leadership had significant effect on students' knowledge. Teacher leadership had been shown to affect student knowledge and performance (Cheng, 1994; Rashid et al., 2019; Uysal & Sarier, 2019; Yusof et al., 2018). Teacher OHS leadership was built on the basis of three of five teacher powers provided by (French & Raven, 1968; Yuki, 1989). Teacher OHS leadership contains teacher position power, reward power, expert power, and personal power. These teacher power encourage students to get knowledge from expert power, power type that relies on the perception of teacher's capacity and readiness to offer or withhold the expertise that students seek (Cheng, 1994).

Another finding showed that teacher OHS leadership had significant effects on student's attitude towards OHS. Teacher OHS also reflects teacher reward power focusing on how teacher appreciate student's performance (Cheng, 1994). Teacher appreciation lead to higher student motivation in learning (Amerstorfer & Freiin von Münster-Kistner, 2021; Theobald, 2005). When one's exhibit high levels of motivation, they experience a heightened sense of energy and are more motivated to

allocate their resources to their work, resulting in positive attitudes towards safety performance (Quansah et al., 2023).

Teacher OHS leadership also showed significant effect on student safety behavior. This finding is in line with the research conducted by (Karthega, 2018; Quansah et al., 2023; Subramaniam et al., 2023; T. C. Wu et al., 2008). Teacher OHS leadership emphasizes a goal-oriented approach, encouraging teachers to instill a strong sense of responsibility in students regarding safety rules and regulations in laboratories, as they recognize the gravity of achieving safety objectives (Karthega, 2018).

Peer's Safety Behavior Effects

The research findings show that peer's safety behaviors has significant and positive effect on OHS knowledge, attitude towards OHS, and safety behavior of the students. Peer's effect has been discussed in educational field (Bäckström, 2022, 2023; Barahona et al., 2023; Sacerdote, 2011). The presence of peers typically enhances students' outcomes by fostering a more favorable learning environment and facilitating the exchange of knowledge through both formal and informal interactions (Epple & Romano, 2011). Student behavior can be affected by their peer's attitude and behavior (Wolniak & Ballerini, 2020).

Knowledge, Attitudes, and Behavior Interrelations.

The previous theoretical framework has claimed that knowledge have potential effect on attitude and behavior (Bandura & Walters, 1977). The current study findings confirms these theoretical frameworks by displaying significant relationships between knowledge, attitudes, and behaviors. The results are in line with prior study on student's safety behaviors (Jeong et al., 2019). Safety knowledge has significant and positive effect on attitude towards OHS. Knowledge can be considered a structural attribute of attitudes, influenced by both the quantity of beliefs and experiences connected to the attitude in one's memory and the intensity of the associative connections between these beliefs or experiences and the attitude itself (Fabrigar et al., 2006; Krosnick & Petty, 1995). That is having adequate knowledge about OHS may form student's attitude towards safety. The significant effect of safety knowledge on safety behavior echo the research conducted by (Lu & Yang, 2010) and (Neal et al., 2000) stating that one's with adequate safety knowledge will perform safety behavior.

Among 4 predictors, student's OHS knowledge displays the strongest direct and total effect on student's safety behavior since knowledge is the foundation of one's attitude and behavior (Fabrigar et al., 2006). This result is align with (Al-Kandari et al., 2019) found that safety food knowledge has the highest correlation with attitude and behavior (practices). Higher amounts of knowledge will form higher one's attitude and behavior than attitude and behavior of one's with lower amounts of knowledge. By focusing on stimuli, peer's safety behavior shows slightly higher total effect on student's safety behavior than teacher OHS leadership. This lead to the conclusion that teacher and peers are important part of stimuli to encourage learning climate for students (Rodrigues et al., 2020; Warburton, 2017).

Implications of the Study

The study has theoretical and practical implications on safety behavior in academic settings.

Theoretical implications

The current study provides the following theoretical implications: First, the study contributes to the body of knowledge as it explains the student decision-making process that students go through related to safety behavior in learning using teacher OHS leadership and peers' safety behavior as stimuli. It displayed students who perform safety behavior are influenced by their learning climate related with their teacher and peers. Second, it has also demonstrated that the most influential thing in student safety behavior is their OHS knowledge. Higher OHS knowledge will encourage students to have a positive attitude towards OHS and perform safety behavior in their learning laboratories or workshops.

Practical implications

The study practical implications were derived from the student safety behavior model: First, to encourage students to perform safety behavior, the teacher or lecturer should set the learning climate to reflect adequate safety behavior. This safety climate includes teacher OHS leadership and peers' safety behaviors. Second, students must be equipped with qualified OHS knowledge to be able to demonstrate adequate safety behavior in laboratories and workshops.

Conclusions

The current study concludes all the hypothesized statements are supported by the data. Teacher and peers' behavior as stimuli has significant effects on student's safety behaviors in laboratories or workshops. KAB model was also applied to explain students' safety behaviors. Among all predictors of safety behaviors, OHS knowledge showed the highest effect. Higher OHS knowledge will lead to a higher probability of executing safety-related behaviors.

However, the study is not without limitations. The self-reported questionnaire also have a risk of biases: social desirability and consistency.

Further research can be conducted to tackle these limitations. It can also expand the model by adding other variables to give a more comprehensive understanding of student's decision-making process in safety-related behavior. Further research may formulate interventions to increase student's safety behaviors using the model produced in this research.

Conflict of Interest Statement

The authors declare that there are no conflicts of interest regarding the publication of this research article. All funding sources supporting this work are acknowledged, and there has been no involvement of any third party in the study design, data collection, analysis, interpretation, or manuscript preparation. The authors affirm that the research presented in this article is conducted in an unbiased and objective manner.

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Appendix

Teacher Occupational Health and Safety Leadership (TOHSL)		
Code	**Statements**	**Source**
TOHSL1	My teacher obeys work rules related to OHS (occupational health and safety) during practicum as well as setting an example for students	(Cąliş & Buÿükakinci, 2019; T.-C. Wu, 2005)
TOHSL2	The teacher can explain about OHS well and make us as students able to learn OHS well.	
TOHSL3	The teacher helps us to understand how important OHS principles are used in practicum.	
TOHSL4	Our teacher believes that we can carry out the OHS rules properly during practicum.	
TOHSL5	The teacher will provide solutions when problems related to OHS occur in the practicum learning process.	
TOHSL6	The teacher will mediate when there is a conflict that is dangerous to students' safety during practicum.	
TOHSL7	The teacher always reminds us to obey the OHS rules during practicum.	
TOHSL8	The teacher gives appreciation to students who obey the OHS rules during practicum.	
TOHSL9	The teacher reprimands students who do not obey the OHS rules during practicum	
Peer's Safety Behavior (PEER)		
Code	**Statements**	**Source**
PEER1	My friends use all the safety equipment needed for the lab.	(Neal et al., 2000; Uzuntarla et al., 2020)
PEER2	My friends use appropriate safety procedures to complete the practicum.	
PEER3	My friends use the best safety equipment for practicum.	
PEER4	My friends encourage each other to use OHS procedures in the practicum.	
PEER5	My friends always strive to improve occupational health and safety (OHS) in practicum	
PEER6	My friends voluntarily practice doing work that can improve the application of occupational health and safety (OHS) in practicum	
Occupation Health and Safety Knowledge (KNOW)		
Code	**Statements**	**Source**
KNOW1	I understand how to conduct the practicum in a safe manner.	(Basahel, 2021)
KNOW2	I know well how to use protective and safety equipment in practicum.	
KNOW3	I understand how to create a practicum site that complies with health and safety standards.	
KNOW4	I know how to reduce the risk of accidents and work incidents in practicum.	
KNOW5	I understand the hazards of practicum and the precautions that need to be taken during practicum.	
Attitude towards OHS (ATTI)		
Code	**Statements**	**Source**
ATTI1	OHS procedures are easy to carry out in the practicum.	Self-developed based on definition of attitude and OHS context
ATTI2	OHS procedures are useful for students.	
ATTI3	I will always pay attention to OHS procedures in every practicum	
Student Safety Behavior (BEHAV)		
Code	**Statements**	**Source**
BEHAV1	I use all the safety equipment needed in the practicum.	

BEHAV2	I used appropriate safety procedures in completing the lab.	(Neal et al., 2000; Uzuntarla et al., 2020)
BEHAV3	I ensure that I have used the best safety equipment in the practicum.	
BEHAV4	I encourage my friends to use OHS procedures in the practicum.	
BEHAV5	I always strive to improve occupational health and safety (OHS) during practicum.	
BEHAV6	I voluntarily do work that can improve occupational health and safety during practicum	

4. **Bukti konfirmasi artikel accepted (24 Februari 2024)**

UNM

DR. DARMAWANG, M.Kes UNM <darmawang@unm.ac.id>

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Kepada: "DR. DARMAWANG, M.Kes UNM" <darmawang@unm.ac.id>

Editorial Decision: Article ID- 2283/JEELR

Dear Darmawang

Congratulations!

We are happy to let you know that your article ***"Building a Culture of Safety: Teacher and Peer Impact on Safety Behaviors among Vocational High School Students"*** has been selected for publication in *Journal of Education and e-Learning Research*. Your article was evaluated in a blind review process by two referees in addition to the input from the editor. Your article will be available online within **90 working days** after receiving the publication fee.

Publication Fee: Publication Process Fee of your article is USD 1800 that includes English editing, proofreading and processing charges. Please pay the total USD 1800 of article processing charges by clicking the link below:

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Please remember to quote the manuscript number, 2283/JEELR, whenever inquiring about your manuscript. After receiving your publication process fee, we will publish your article in the upcoming issue.

Please acknowledge receiving the letter of acceptance.

Should you have any further questions at this stage please do not hesitate to let me know. I would be pleased to assist you.

I look forward to hearing from you soon.

With best regards,

Sara Lim
Managing Editor

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Building a culture of safety: Teacher and peer impact on safety behaviors among vocational high school students

Darmawang
Automotive Engineering Education, Universitas Negeri Makassar, Indonesia.

https://orcid.org/0009-0000-3521-009X

Amiruddin Amiruddin
Mechanical Engineering Education, Universitas Negeri Makassar, Indonesia.

https://orcid.org/0000-0003-4499-4804

Jumadin Jumadin
Automotive Engineering Education, Universitas Negeri Makassar, Indonesia.

https://orcid.org/0009-0004-7553-5621

Wirawan Setialaksana
Informatics and Computer Education, Universitas Negeri Makassar, Indonesia.

https://orcid.org/0000-0001-9026-2749

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Abstract

There is an increased risk of workplace accidents for younger employees. Academic laboratories have demonstrated a higher prevalence of accidents. Occupational health and safety (OHS) education plays a central role in reducing the risk of accidents and aims to habituate safety behavior in educational settings. The current research aims to investigate the factors affecting students' safety behaviors using a knowledge-attitude-behavior model within stimulus-organism-response frameworks. A quantitative and non-experimental study involved sending an electronic questionnaire to 959 Indonesian vocational high school students who had undergone half of their learning process in a workshop that put them at risk of accidents. A structural equation model was conducted on the data which showed that all variables in the model were valid and reliable. Teachers' OHS leadership encourages students' safety knowledge, attitudes and behaviors. Positive and noteworthy benefits to students' safety knowledge, attitude and behaviour are demonstrated by peer safety behaviours as indicated by similar results. Among the predictors, OHS knowledge had the greatest influence on students' safety behavior. The current research findings provide evidence that supports the fact that student safety behavior follows the knowledge attitude behaviour model within the stimulus organism response framework.