EMPATI
JURNAL ILMU KESEJAHTERAAN SOSIAL

p-ISSN: 2301-4261
e-ISSN: 2621-6418

EMPATI: JURNAL ILMU KESEJAHTERAAN SOSIAL
VOL. 13 NO. 2 Desember 2024
DOI: 10.15408/empati
Halaman: 100 - 111

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THE INFLUENCE OF PEER-ASSISTED LEARNING & STRESS COPING TOWARD CADETS' LEARNING ENGAGEMENT

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Abstract. *This research aimed to see the influence of peer-assisted learning and coping stress toward cadets' learning engagement. This is a quantitative study with ex-post facto method. The research instrument was a questionnaire given to 334 samples. The data analysis technique used multiple linear analysis with the SPSS application. The results of the study showed that there was a positive influence of peer-assisted learning and stress coping towards cadets' learning engagement. So, it can be recommended to organize a learning method with a peer assistance program, so that it can increase cadets' learning engagement. Furthermore, universities can organize stress management training to help cadets cope with academic pressure effectively, so that cadets can be more proactive in learning activities. Although this study has been carried out optimally, there are several limitations to the study that can be used as recommendations for future research. This study used a quantitative approach, then researchers are advised to use a qualitative approach to explore the relationship between these three variables or assessed other variables. In addition, further research needs to consider other factors that influence student learning engagement, such as intrinsic motivation, teaching quality, and family support.*

Keyword*: Learning Engagement; Peer-Assisted Learning; Stress Coping.*

Abstrak. Tujuan penelitian ini adalah untuk melihat pengaruh asistensi teman sebaya dan koping stres terhadap keterlibatan belajar. Penelitian ini adalah penelitian kuantitatif dengan metode ex-post facto. Instrumen penelitian adalah kuisioner yang diberikan kepada 334 sampel. Teknik analisis data menggunakan analisis linear berganda dengan bantuan aplikasi SPSS. Hasil penelitian menunjukkan bahwa terdapat pengaruh positif asistensi teman sebaya dan koping stres terhadap keterlibatan belajar mahasiswa. Dari hasil penelitian ini maka dapat direkomendasikan penyelenggaraan metode pembelajaran dengan program asistensi teman sebaya sehingga dapat membantu meningkatkan keterlibatan belajar mahasiswa. Selanjutnya, perguruan tinggi dapat menyelenggarakan pelatihan manajemen stres untuk membantu mahasiswa mengatasi tekanan akademik secara efektif, sehingga mahasiswa dapat lebih proaktif dalam kegiatan pembelajaran. Walaupun penelitian ini telah dilaksanakan secara maksimal, namun terdapat beberapa keterbatasan penelitian yang dapat dijadikan sebagai rekomendasi penelitian pada masa yang akan datang. Penelitian ini menggunakan pendekatan kuantitatif saja, peneliti selanjutnya disarankan untuk menggunakan pendekatan kualitatif untuk menggali lebih dalam keterkaitan ketiga variabel ini atau mengkaji variabel lainnya. Selain itu, penelitian selanjutnya perlu mempertimbangkan faktor-faktor lain yang mempengaruhi keterlibatan belajar mahasiswa, seperti motivasi instrinsik, kualitas pengajaran, dan dukungan keluarga.

Kata Kunci*: Keterlibatan Belajar; Asistensi Teman Sebaya; Koping Stres.*

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INTRODUCTION

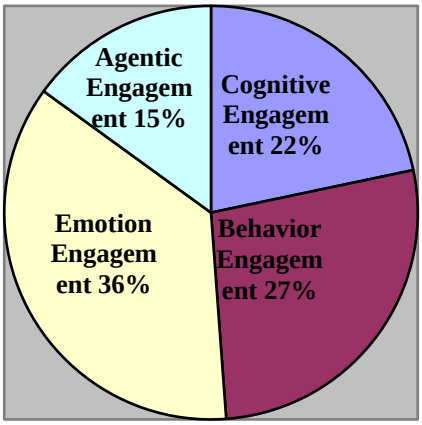
Learning engagement is one of the important factors that determine academic success and Graduate Learning Outcomes. Meanwhile, Graduate Learning Outcomes is a Key Performance Indicator (KPI) of Higher Education in accordance with the National Standards of Higher Education. Benlahcene et al., (2024) proved that students' learning motivation and academic achievement are largely determined by students' involvement and active participation in learning activities. Making students actively involved in learning is the main goal of choosing teaching methods today because it will give positive impact on the achievement of the learning curriculum expected by higher education institutions (Wahlström & Schmidt, 2024).

The importance of learning engagement in 21st century learning is due to the development of globalization and changes in the education system that require students to be the center (students-centered learning), no longer the lecturers (teacher-centered learning) (Zhong et al., 2023). Learning engagement provides students with an educational experience that is very useful for connecting subject matter with learning process skills (Bayoumy & Alsayed, 2021). This authentic learning experience is useful for students to get bona fide jobs in the future. Students who are accustomed to being actively involved in learning also have good communication skills which are very useful in the world of work (Hu et al., 2024).

However, learning engagement is still a major problem for the cadets of Merchant Marine Polytechnic of West Sumatera. Based on the results of discussions in the "sharing knowledge" activities of lecturers from the Ministry of Transportation, data was obtained in the field that many maritime cadets do not have adequate knowledge and skills. The officers on the ship must teach them everything, both theory and practice. This ignorance of cadets is caused by their lack of involvement in learning activities. The cadets in this era, who are called generation Z tend to be passive in learning because in their daily lives they prioritize individualization and are less involved in learning activities (Pham et al., 2024). Second, cadets tend to less active and do not dare to perform or present voluntarily because of the atmosphere of the maritime school which is always taught "according to directions" and daily regulations that are fixed (Irwan et al., 2024). Therefore, cadets do not dare to advance and develop themselves because they are afraid of being wrong and being punished.

The following data on student involvement in learning is filled in by all lecturers at the Merchant Marine Polytechnic of West Sumatera.

Figure 1. The Data of Cadets' Learning Engagement



Source: Initial Research Data

The conclusion from the chart above is out of 553 total cadets in batch VI, VII, and VIII, their learning engagement in each aspect is still below average. It is hoped that each cadet has a learning engagement in each aspect of more than 70%, so that learning outcomes are achieved optimally. The most prominent aspect of learning engagement is the emotional engagement, namely the cadets' positive reactions and attitudes in learning activities which have only reached 36%. Furthermore, it is followed by behavioral engagement, which is

cadets' active participation in learning activities, namely 27%.

Then, cognitive engagement, that is the level of cadets thinking about the material and tasks given, namely 22%, and agentic engagement, which is the involvement of cadets as contributive and constructive agents in learning, namely 15%. Thus, cadets' learning engagement is still low, therefore it is necessary to pay attention to the factors that influence learning engagement, so that it can be a solution and anticipatory step for lecturers and cadets for the future.

Cadets' learning engagement is very dependent on the cadets themselves, because it is a psychological aspect that cannot be forced. Factors that influence cadets' learning engagement can be divided into internal and external factors. Internal factors that can activate cadets' learning engagement include motivation and self-efficacy (H. Wu et al., 2020), character and personality (Sörman et al., 2024), attention (Huang, 2024), emotional intelligence and stress coping strategies (Gosrani & Hang, 2023). The external factors influence cadets' learning engagement include peer assistance (Hu et al., 2023), social media (Assefa et al., 2023), lecturer's enthusiasm and lecturer's commitment in teaching (Yan et al., 2023), learning media and learning strategies (R. Wu, 2024). From these factors, this study will only discuss two factors that are assumed to be the most dominant in influencing cadets' learning engagement, namely peer-assisted learning (external factor) and stress coping (internal factor).

Previous research related to learning engagement, peer-assisted learning, and stress coping has been widely conducted. First, research from Primahendra et al., (2020) with a research focus on the influence of peer learning on students' learning process. Second, research from Wardiah (2018) with a research focus on peer tutoring assistance in improving student's learning outcomes. Third, research from Syamsiah et al., (2022) with a research focus on the relationship between adolescent coping styles and resilience during the COVID-19 pandemic. Fourth, research from Yusuf et al., (2020) with a research focus on the influence of peer environment on students' learning outcomes. Fifth, research from Parwatiningsih et al., (2020) with a research focus on the influence of the peer-teaching practicum learning method on practical learning. Sixth, research from Tetiwar & Appulembang (2018) with a research focus on the peer-tutoring method to improve students' understanding.

From the previous research, it can be concluded that peer-assisted learning has an effect on learning outcomes, and stress coping also has an effect on learning outcomes. Thus, the novelty of this study is to see the influence of these two variables; peer-assisted learning and stress coping on learning engagement. This research was conducted on the recommendation of previous research which suggested looking at the relationship between learning engagement with learning factors and various other educational contexts (Du et al., 2020). Therefore, this research is a roadmap for previous research and to bridge further research related to peer-assisted learning, stress coping, and learning engagement.

LITERATURE REVIEW

Learning engagement is a measure of the extent to which cadets take part in learning activities enthusiastically, participative, actively and interactively (Mensah et al., 2024). Cadets are said to be significantly involved in learning if they are able to construct the four main components that exist in themselves, namely behavior, emotions, cognition and attitudes as agents of change for themselves and for the environment (Pettersen et al., 2024). Cadets' involvement in learning can be seen from the willingness and desire of students to build self-

awareness to actively participate in academic activities, starting from coming to class on time, paying close attention to lecturers, doing assignments honestly, and sharing their learning experiences with colleagues (Afzali & Izadpanah, 2021). Cadets' learning engagement bond with each other shown through communication, trust, and a sense of security in each student (Munaa & Firdaus, 2023).

Peer assistance in learning activities is also known by various terms, such as peer learning, peer-assisted learning, and peer tutoring. Peer-Assisted Learning (PAL) can be defined as a learning activity where the cadets who have more abilities provide tutoring to their friends who need help, so that cadets at the same level of study help each other with learning problems and personal problems related to academics (Bengesai et al., 2023). Peer-assisted learning refers to the acquisition of knowledge and skills from peers who come from the same social group and the same language level so that it is easily transmitted to other peers (Balilah et al., 2020). The definition of peer tutoring in terms of tutors is "learning twice", which means that the more a cadet shares his knowledge, the more solid the knowledge he has (Tanveer et al., 2023). PAL is a process of students support students and this is commonly happen in the academic situation and academic activities (Tibingana-Ahimbisibwe et al., 2022).

Coping is a person's conscious effort to continuously change behavior in order to manage problems and emotions caused by internal and external demands that exceed the person's resources (Stubbs et al., 2023). Stress coping can also be defined as a resilience strategy possessed by the cadets to ignore the negative impacts of academic stress experienced during college (El-Awaisi et al., 2024). Stress coping is the process of cadets managing stressful situations related to academics and using coping strategies to deal with these problems, such as problem solving in college assignments, concentration during learning activities and avoiding negative or unimportant things (Białczyk et al., 2020). Coping strategies from academic stress carried out by a student can be seen from how her/his self-concept, this is because self-concept will grow from a student's interaction with other people who influence her/his life (Suryana, 2022).

The purposes of this study are to answer the following hypotheses:

H1 = There is a positive influence of peer-assisted learning on learning engagement.
H2 = There is a positive influence of stress coping on learning engagement.
H3 = There is a simultaneous positive influence of peer-assisted learning and stress coping toward learning engagement.

METHOD

This research is quantitative research with an ex-post facto method. The research location is at Merchant Marine Polytechnic of West Sumatera. This research was conducted for 6 months, starting from April 2024 to November 2024. The population of this research was the cadets of batch VI and VIII with a total of 334 cadets. This research used total sampling technique, in order to make the research results can be generalized and are more valid. The research instrument used a questionnaire which can be seen in table 1.

Table 1. Questionnaire Layout

No.	Variable	Indicator	Questionnaire Statement	Code
1	Peer-Assisted Learning, *adapted from:* (Aljahany et al., 2021; Johnson & LaGasse, 2022; Loda et al., 2020)	Social Congruence	I have trust on my friend's assistance in learning	PAL1
			I feel relax when my friend assist me in learning	PAL2
			Peer-Assisted Learning creates sharing experiences	PAL3
			My friend's assistance creates emphatic and supportive learning	PAL4
			I can solve my learning difficulties with friend's assistance	PAL5
			I enjoy my friend's tutorial	PAL6
			I can create my own learning techniques by friend's assistance	PAL7

		Cognitive Congruence	Peer-Assisted Learning creates more knowledge experience	PAL8
			My common knowledge base develop by my friend's assistance in learning	PAL9
			My friend is my role model	PAL10
			I enjoy Peer-Assisted Learning because I have the same language as my friend	PAL11
			I understand technical terms when my friend assist me in learning	PAL12
			Peer-Assisted Learning gives effective knowledge transfer	PAL13
		Behavior Congruence	Peer-Assisted Learning creates verbal interaction	PAL14
			Peer-Assisted Learning makes a good verbal response in learning	PAL15
			I can pay very attention to the materials when my friend assist me in learning	PAL16
		Skill Congruence	Peer-Assisted Learning develop my performance in learning	PAL17
			I can develop my critical thinking and decision making skills when my friend assist me in learning	PAL18
			I am interested when my friend assist me in learning	PAL19
			Peer-Assisted Learning is a better way to develop my skills in learning	PAL20
2	*Stress Coping, adapted from:* (Giray et al., 2024; Younas et al., 2023; Abdulghani et al., 2020)	Strategy-Focused Coping	My stress coping is by doing regular exercise	SC1
			I play game as my stress coping strategy	SC2
			I watch movie as stress coping strategy	SC3
		Problem-Focused Coping	I organize my learning schedule	SC4
			I seek for additional resources to solve learning problems	SC5
			I make time-management techniques in learning	SC6
		Behavior-Focused Coping	I get used to build my physical health to support learning	SC7
			I create my psychological health to support learning	SC8
			I make sure I have overall wellbeing in learning	SC9
			I do physical activity to support learning	SC10
		Emotion-Focused Coping	I seek emotional support from my friends	SC11
			I view situations from a positive perspective	SC12
			I like engaging in hobbies and make relaxation techniques	SC13
			I manage my emotional distress in learning	SC14
3	Learning Engagement, *adapted from:* (Tesfaw et al., 2024; Xu et al., 2023; Emiru & Gedefaw, 2024)	Cognitive Engagement	I usually can find a solution for any learning difficulties	LE1
			I am an active learner and responsible in my own learning	LE2
			I know my own competence and can increase it in everyday learning	LE3
			I admit that learning is important to pass academic assessment	LE4
		Bahavior Engagement	I always participate in learning activity	LE5
			I always improve my learning performance	LE6
			I am doing academic presentation well	LE7
			I can build good team work in collaborative learning group	LE8
		Emotion Engagement	I am interested in my learning activity	LE9
			I am passionate in everyday learning activity	LE10
			I always feel happy in learning, because I get new and different experiences everyday	LE11
			I feel enjoy when learning new things	LE12
		Agentic Engagement	I am hopeful for my future education	LE13
			I plan to achieve better learning goals	LE14
			I believe that better learning management create job opportunities in the future	LE15
			I have been involved in peer learning activity	LE16
			I have engaged in peer assessment	LE17

Source: Trial Questionnaire

The research questionnaire was tested on 59 cadets outside the sample, namely cadets on batch VII. This aim is to ensure the validity and reliability of the questionnaire before given to the research sample. The research questionnaire was given directly to cadets outside of lecture hours. The data analysis technique used multiple linear by the SPSS application.

RESULT AND DISCUSSION

Result of Validity and Reliability Test

Before given to the research sample, validity and reliability tests were conducted on 59 cadets of batch VII. The r-table value with a sample size of 59 people was 0.2564 (df (N-2) = 57, α = 0.05). The questionnaire item is valid if r-calculated is greater than r-table. The questionnaire item is reliable if Cronbach's Alpha value is greater than 0.06. The results of validity and reliability tests of the questionnaire using SPSS can be seen in table 2.

Table 2. Validity and Reliability

Validity Test Result				Reliability Test Result	
Variable	Indicator	Pearson Correlation	Description	Cronbach's Alpha	Description
Peer-Assisted Learning (X1)	PAL1	0.490	V	0.892	Reliable
	PAL2	0.791	V		
	PAL3	0.201	NV		
	PAL4	0.823	V		
	PAL5	0.718	V		
	PAL6	0.210	NV		
	PAL7	0.669	V		
	PAL8	0.858	V		
	PAL9	0.580	V		
	PAL10	0.453	V		
	PAL11	0.429	V		
	PAL12	0.479	V		
	PAL13	0.583	V		
	PAL14	0.555	V		
	PAL15	0.171	NV		
	PAL16	0.837	V		
	PAL17	0.878	V		
	PAL18	0.765	V		
	PAL19	0.195	NV		
	PAL20	0.845	V		
Stress Coping (X2)	SC1	0.812	V	0.951	Reliable
	SC2	0.790	V		
	SC3	0.882	V		
	SC4	0.869	V		
	SC5	0.759	V		
	SC6	0.894	V		
	SC7	0.605	V		
	SC8	0.679	V		
	SC9	0.485	V		
	SC10	0.545	V		
	SC11	0.827	V		
	SC12	0.897	V		
	SC13	0.567	V		
	SC14	0.829	V		
Learning Engagement (Y)	LE1	0.440	V	0.930	Reliable
	LE2	0.422	V		
	LE3	0.837	V		
	LE4	0.821	V		
	LE5	0.800	V		
	LE6	0.842	V		
	LE7	0.790	V		
	LE8	0.000	NV		
	LE9	0.411	V		
	LE10	0.752	V		
	LE11	0.858	V		
	LE12	0.535	V		
	LE13	0.802	V		
	LE14	0.762	V		
	LE15	0.711	V		
	LE16	0.643	V		
	LE17	0.000	NV		

Source: Research Data 2024
(Note: V = Valid, NV = Not Valid)

Furthermore, the number of questionnaire items used for the research sample can be seen in Table 3.

Table 3. The Research Instrument

No.	Variable	Trial Questionnaire	Research Questionnaire
1	Peer-Assisted Learning (X1)	20	16
2	Stress Coping (X2)	14	14
3	Learning Engagement (Y)	17	15

Source: Research Data 2024

Result of Prerequisite Test

Before conducting multiple linear analysis, prerequisite tests were conducted, namely normality test, multicollinearity test, and heteroscedasticity test. The results of the

normality test can be seen in Figure 2 and Figure 3.

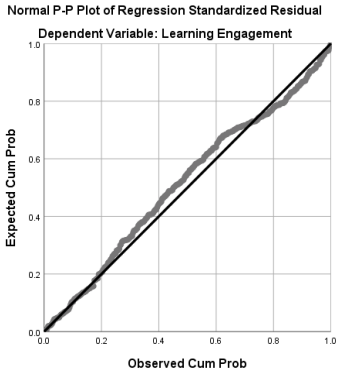


Figure 2. Normality Plot

The normality test result from peer-assisted learning, stress coping, and learning engagement variables can be seen from the plot that follows the diagonal line. Thus, the data of the three research variables are normally distributed. In addition, the normality of the data can also be seen from the histogram in Figure 3.

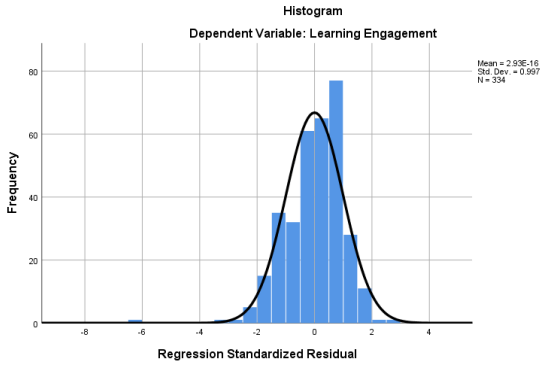


Figure 3. Histogram of Normality

The histogram above shows a curved line which means that all research variable data is normally distributed. Furthermore, the results of the multicollinearity test can be seen in table 4.

Table 4. Multicollinearity Test Result

No.	Independent Variable	VIF	Tolerance	Result
1	Peer-Assisted Learning (X1)	1.174	0.852	No multicollinearity
2	Stress Coping (X2)	1.174	0.852	No multicollinearity

Source: Research Data 2024

The results of multicollinearity test are determined by the VIF value and tolerance value in the SPSS data processing results. If the VIF value is less than 10 and the tolerance value is greater than 0.1, then there is no multicollinearity. The prerequisite for multiple linear analysis is that there is no multicollinearity. Thus, the prerequisite test can be continued with the heteroscedasticity test. The results of the heteroscedasticity test can be seen in Figure 4.

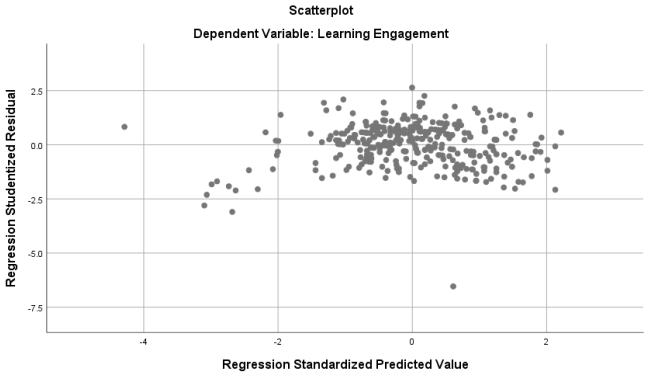


Figure 4. Heteroscedasticity Test Results

From figure 4, it can be described that the dots are spread randomly and do not form any pattern or chart. It means that there is no heteroscedasticity in the research variable data. The prerequisite for the multiple linear analysis test is that there is no heteroscedasticity in the research data. Because the prerequisite test has been met, the multiple linear analysis test can be carried out.

Result of Hypothesis 1 and Hypothesis 2

Hypothesis 1 of the study is to see whether there is a positive influence of peer-assisted learning toward learning engagement. Hypothesis 2 is to see whether there is a positive influence of stress coping towards learning engagement. The research hypothesis is accepted if the t-calculated value is greater than the t-table value. The t-table value for the research sample of 334 cadets is 1.98. The results of Hypothesis 1 (H1) and Hypothesis 2 (H2) tests can be seen in table 5.

Table 5. T-Test Result

No.	Independent Variable	t-count	t-table	Result
1	Peer-Assisted Learning (X1)	2.62	1.98	Accepted H1
2	Stress Coping (X2)	4.17	1.98	Accepted H2

Source: Research Data 2024

Table 5 explains that Hypothesis 1 (H1) is accepted, it means that there is a positive influence of peer-assisted learning toward learning engagement. Then, Hypothesis 2 (H2) is also accepted, it means that there is a positive influence of stress coping on learning engagement.

Result of Hypothesis 3

Hypothesis 3 of the study is to see whether there is a simultaneous positive influence of peer-assisted learning and stress coping on learning engagement. Hypothesis 3 (H3) is determined by the F test. The research hypothesis can be accepted if the F-count value is greater than the F-table value. The F-table value for sample of 334 cadets is 3.0. The results of the F test can be seen in table 6.

Table 6. F-Test Result

F-count	F-table	Result
19.2	3.0	Accepted H3

Source: Research Data 2024

Table 6 explains that Hypothesis 3 (H3) is accepted, it means that there is a simultaneous positive influence of peer-assisted learning and stress coping on learning engagement.

Discussion

From the result of Hypothesis 1, it can be concluded that peer-assisted learning has a positive effect toward cadets' learning engagement. This is in line with the opinion of Orsal & Ergun (2021) which states that peers will direct cadets in choosing decisions and changing their learning behavior properly, so that students will try to commit to these changes because they are influenced by the positive attitudes of their peers. Peers can also influence students in terms of behavioral involvement in learning such as fostering an entrepreneurial spirit (Utama & Syaiful, 2020). In addition, peer learning also plays an important role in shaping students' inferential skills, such as the ability to communicate in class presentations and the ability to interpret data (Rahmasari et al., 2024). Thus, it can be concluded that learning from peers has a significant impact on making students actively involved in learning activities. PAL makes the learning activities become more fun and decrease students' academic stress (Manolopoulos et al., 2022).

Furthermore, from the results of Hypothesis 2, it can be concluded that students' stress coping also has a very positive effect on their involvement in learning. According to Smart et al. (2024), the ability to manage academic stress is an effective way to make students actively involved in learning activities, as well as bring success to the university. Student coping styles will make students independent and have a positive attitude in learning, thus it will make the students have enthusiasm to participate in every learning activity (Amai, 2020). Students' stress coping strategies will build optimism, good mood, motivation, and satisfaction in learning, thereby increasing their willingness to participate in learning activities (Gibbons, 2023). Thus, it can be concluded that stress coping strategies have a significant positive impact on student engagement in learning.

Then, from the results of Hypothesis 3, it can be concluded that peer-assisted learning and stress coping have a simultaneous positive influence towards cadets' learning engagement. Chen (2023) assumes that learning engagement is influenced by the social environment such as peer support and motivation from within students to always persist in all situations. The intensity of relationships with peers and the courage or agility to learn in the fatigue of academic burdens will make students more

involved in activities at university (Jeon et al., 2022). Learning engagement is generally supported by the presence of peers and lecturers, as well as internal motivation from each student (Chi, 2023). Students' learning performance has been proven affected by peer-teaching and students' self-reflection as one of the strategies of students' stress coping (Di Benedetti et al., 2023). In addition (Jawhari et al., 2021).

CONCLUSION

The results of the study indicate that both peer-assisted learning and stress coping have a significant influence toward cadets' learning engagement. From the results of this study, it can be recommended to organize a learning method with a peer assistance program, so that it can help increase cadets' learning engagement. Furthermore, universities can organize stress management training to help cadets cope with academic pressure effectively, so that cadets can be more proactive in learning activities. Although this study has been carried out optimally, there are several limitations of the study that can be used as recommendations for future research. This study uses a quantitative approach only, further researchers are advised to use a qualitative approach to explore the relationship between these three variables or examine other variables. In addition, further research needs to consider other factors that influence cadets' learning engagement, such as intrinsic motivation, teaching quality, and family support.

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