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The Role of Social Support to Foster Creative Thinking of Vocational Students In University: Mediating Effect of Creative Self-Efficacys

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ABSTRACT: Creative thinking skills have become one of the skills needed in the future. Many studies highlight the critical role of social support in forming students' creative thinking skills. However, the existing literature is still unclear about the structural mechanisms for building creative thinking with the role of supporting family, lecturers, and friends through students' creative self-efficacy. This study examines the effect of family support, lecturers, and friends on the ability to think through vocational students' creative self-efficacy mediators. There are 278 vocational students at the university involved in this study. Structural equation modelling is used to test direct and indirect effects. The study findings reveal that lecturer support and creative self-efficacy influence students' creative thinking. Meanwhile, the support of friends and family has no direct influence on creative thinking. Creative self-efficacy only significantly mediates the effect of lecturer support on creative thinking. The study results are discussed in depth by offering several important implications for vocational education practitioners both at universities and vocational high schools.

Keywords: creative thinking, creative self-efficacy, social support, vocational student, self-efficacy.

I. INTRODUCTION

One of the 21st-century skills that lecturers and campuses must emphasize is creative and innovative thinking. According to Kivunja (2015) [1], creative and innovative thinking skills are considered "super skills" to prepare students to enter new worlds and careers. Developing one's capacity to think creatively is critical to students' academic and professional success [2]. There is a widespread emphasis on encouraging creative thinking in research reports and policy documents in many countries [3-6]. Encouraging students to be creative and guiding them in developing innovative products is a fundamental goal of the education and training process [7]. As an advanced cognitive process, creative thinking can exist in various fields and has now become a critical cognitive process in all work areas. Many scholars have discussed the crucial role of creative thinking in the educational context [8, 9]; even in the technical field, creative thinking skills are needed [10-12].

Many things influence a student's creative thinking ability. Theoretically, creativity arises from the interaction of internal and external influences [13]. On the external dimension, one of the most significant is their social life [14], [15]. The critical role of social aspects in fostering creative thinking has been widely discussed by previous studies, for example, in education [14] and business organizations [16]. However, studies discussing how social support influences individual creative thinking abilities are still limited. Social support is explained by three dimensions: supportrom family, friends, and teachers [17]. Meanwhile, in the family context, previous studies have focused on family characteristics such as parenting style, income level, family composition, and several siblings [18-20]. How family support fosters students' creative thinking skills has not been found much. One of the factors that has a vital role in promoting creative thinking is family [18].

In addition, another context of social support that has a vital role in fostering creative thinking is teacher support. In previous studies, teachers played an important role in promoting student creativity [21]. Teacher support felt by elementary school students is positively related to their creative thinking [22]. Students' confidence in their lecturer's ability to help them is measured by how much they say they depend on their lecturer [23]. Lecturers play an essential role in the education of their students because they spend so much time with them in class [24]. When students believe their lecturers support them, they tend to try harder, stay engaged for more extended periods on

assignments, and seek additional help when they encounter problems [25, 26]. In addition, previous studies show that teacher mentors have a significant impact on the creative potential of students in junior and senior high schools [27, 28].

In addition, according to social cognitive theory, the external environment only influences individual behavior indirectly by influencing cognitive psychological factors [29]. That is social support influences creative thinking through psychological cognitive factors. It has been proven that creative self-efficacy is a reliable indicator of creative outcomes [30, 31]. Creative self-efficacy has a beneficial effect on both creative ideas and performance [32]. In addition, creative self-efficacy often acts as a process variable that mediates the relationship between contextual factors and individual creative output [33]. The role of social support in fostering creative thinking among vocational students in university settings is pivotal, as it encompasses various forms of support, including that from lecturers, family, and friends. Social support has been shown to enhance students' creative self-efficacy, which is the belief in their own creative capabilities, thereby influencing their creative output. Research indicates that when students receive encouragement and constructive feedback from their lecturers, it significantly boosts their confidence in their creative abilities, leading to increased engagement in creative tasks [34]. Moreover, family support plays a crucial role in shaping students' perceptions of their creative potential; supportive family environments can nurture creativity by providing emotional backing and resources for exploration [34]. Additionally, peer support among friends fosters a collaborative atmosphere that encourages risk-taking and idea-sharing, essential components of creative thinking [35]. The interplay of these support systems not only enhances creative self-efficacy but also mediates the relationship between social support and creative performance, suggesting that a robust support network is vital for vocational students aiming to develop their creative skills in a university context [36].

Many studies discuss the critical role of social support for creative thinking. However, less attention is paid to the processes that occur with the support of family, lecturers, and friends who can support the development of creative thinking through students' creative self-efficacy. This gap is surprising, considering that social support from family, lecturers, and friends can influence students' creative growth indirectly and directly, for example, through interaction and involvement of creative self-efficacy as a mediator of the relationship. Therefore, this study aims to examine the effect of family support, lecturers, and friends on the ability to think through vocational students' creative self-efficacy mediators. Specifically, this study objectives to examine the role of lecturer support, family support, and friend support in improving creative thinking skills. In addition, this study also examines the mediating role of creative self-efficacy on the relationship between social support (lecturer support, family support, and friend support) and students' creative thinking skills.

II. LITERATURE REVIEW

1. CREATIVE THINKING

New educational agendas emphasizing creative thinking have emerged in recent years due to shifts in educational philosophy. Creative thinking is finding or making associations, conclusions, and connections that did not exist before [37]. In another explanation, the two aspects of creativity—creative process and creative output—are separated. The difficulty lies in the fact that everyone's brand of originality and inventiveness is so distinctive that it is difficult to cultivate [38]. Creative thinking is valuable, according to Worwood and Plucker [39], because it is related to professional and personal fulfillment. The essence of creativity is original thinking [40]. Creative thinking is the most complex and abstract aspect of high-order cognitive processes [41], and can restructure problems and generate solutions through unexpected ideas [42]. According to this view, creativity is a way of thinking or a talent for thinking.

Theoretically, creative thinking consists of fluency, flexibility and originality [43]. In addition, other studies state that creative thinking can be explained by four indicators, namely fluency, flexibility, originality, and elaboration [44, 45]. Generating a large number of different ideas in response to a given challenge is the essence of "fluency," and this idea is fundamental [46]. The extent to which a person's creative thinking skills are related to the fluency dimension can be measured by the variety and quantity of thoughts a person produces in response to various situations and problems. The "original" indicator indicates that one person's idea is not a derivative of or a carbon copy of another person's idea [46]. Furthermore, "flexibility" refers to the ability to change one's mentality or think in a different way [46]. Another definition of "flexibility" is the ability to change one's thoughts or actions quickly when faced with obstacles or to abandon previously held beliefs about the relationships between ideas, facts, and

events in favor of more contemporary interpretations. According to Torrance (1964) [46], "elaboration" means taking a concept and developing it further, making it more complex, interesting, or complicated.

Social Support for Creative Thinking

Social support is a person's perception of social resources, such as material, emotional, or informational assistance [47]. This help can come from family members, neighbors, instructors, and friends [48]. There is an emphasis on social support as a fundamental and critical social capital that can lead to increased subjective success rates [49]. Previous studies revealed that promoting and increasing social support can increase student self-efficacy [50]. In addition, research has verified the positive effect of social capital on self-efficacy [51] and the mediating effect of self-efficacy between social capital and individual behavior [52].

Meanwhile, in the context of lecturer support, lecturer or teacher support is described as a form of the teacher-student relationship quality [24]. Teacher-perceived support is students' perception that their instructor cares and will help them in times of need [53]. Increasing empirical investigations reveal that teachers' perceived support influences academic self-efficacy significantly and positively [54, 55]. In addition, perceived teacher support positively predicts creative self-efficacy and is positively related to students' innovative thinking [22]. Teachers can play a role in helping youth build creative self-efficacy [56].

Support from family also plays a vital role in fostering creative thinking [20]. Family factors are characteristics and characteristics of the family environment that influence children's development, especially the development of creative thinking [57]. Less emphasis is placed on the processes that occur in the family, which can assist in developing creativity [58]. Previous studies stated that parental support influences students' creative self-efficacy and ultimately influences students' creative ideational behaviors [59]. Parental support is needed so that students' creativity can develop. Across many civilizations, the beneficial relationship between the two factors has been repeatedly demonstrated [60, 61]. Parental support is significant for the social environment in which children live and for family dynamics.

Meanwhile, the support of friends is also critical to foster students' creative thinking. The positive impact of students' originality on their ability to learn independently is reduced by the social support they receive from their peers [62]. Support from friends also encourages the development of individual creativity [63, 64]. Often the social support factor that comes from family, lecturers, and friends is ignored in the process of growing students' creative thinking skills. What is the mechanism for increasing creative thinking by involving social support factors (support from family, lecturers, and friends) and creative self-efficacy of engineering students? This gap is extraordinary considering that the support of family, lecturers, and friends can influence students' creative growth both indirectly and directly, for example, through interaction and involvement of students' creative self-efficacy. Based on previous findings, we hypothesized that the level of student social support consisting of support from family, lecturers, and friends has a positive influence on engineering students' creative thinking.

H1: Family support has a positive influence on engineering students' creative thinking
H2: Lecturer support has a positive influence on engineering students' creative thinking
H3: The support of friends has a positive influence on engineering students' creative thinking
H4: Family support has a positive influence on engineering students' creative self-efficacy
H5: Lecturer support has a positive influence on engineering students' creative self-efficacy
H6: Peer support has a positive influence on engineering students' creative self-efficacy

2. *MEDIATING ROLE OF CREATIVE SELF-EFFICACY*

As part of self-efficacy, "creative self-efficacy" is the extent to which an individual believes in his ability to think creatively and solve problems uniquely and effectively [65]. Moreover, individual belief in their creative skills is called “creative self-efficacy” [32]. Creative self-efficacy is an element of creative confidence beliefs that are easily formed [66]. A person's level of commitment to creative work, their ability to exert the necessary effort, and their willingness to persevere in the face of setbacks are all influenced by this factor [67].

The creative self-efficacy factor significantly encourages individuals to think creatively [30]. Studies have shown that "creative self-efficacy" helps people generate creative ideas and do well at what they do [32]. Empirical research also shows that "creative self-efficacy" includes belief in one's skills and willingness to take risks [31]. People with high creative self-efficacy tend to use motivation, cognitive resources, and actions to meet situational needs [68]. Research has shown that creative self-efficacy relates to creative thinking and behavior [69, 70]. In other studies,

creative self-efficacy often acts as a process variable that mediates the relationship between contextual factors and individual creative output [33]. Referring to existing studies, we hypothesize that creative self-efficacy can mediate the effect of social support on students' creative thinking.

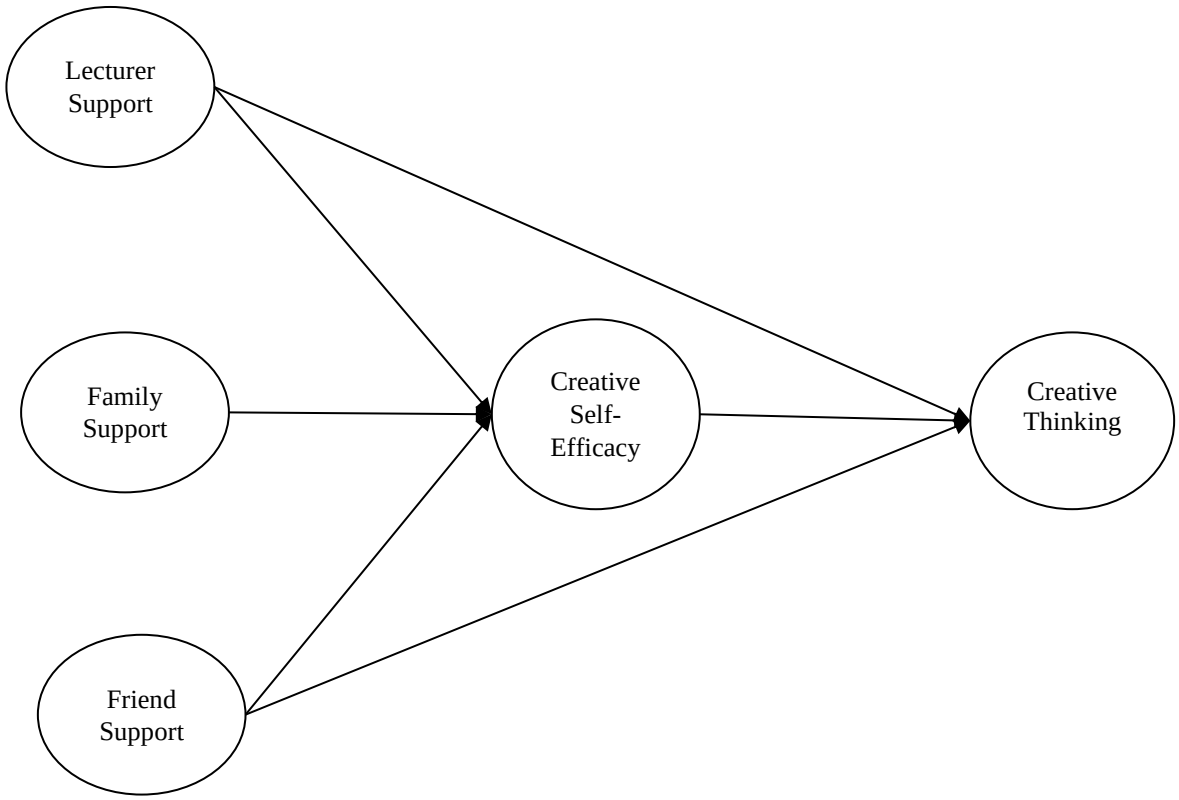
H7: Creative self-efficacy has a positive influence on engineering students' creative thinking

H8: Creative self-efficacy mediates the influence of family support on engineering students' creative thinking

H9: Creative self-efficacy mediates the effect of lecturer support on engineering students' creative thinking

H10: Creative self-efficacy mediates the effect of peer support on engineering students' creative thinking

Growing students' creative thinking needs to involve social support from family, lecturers, and friends. In addition, the interaction between these variables can occur directly and indirectly through creative self-efficacy. Referring to the database of previous studies, we can form a hypothesis testing model shown in Figure 1.



FIGUARE 1. Conceptual thinking framework

III. MATERIAL AND METHOD

This study involved university students at the Teaching and Education Faculty at one of the state universities in Central Java, Indonesia. The total number of respondents was 278 students who were selected using simple random sampling technique. There were 278 students consisting of 8.3% from the Mechanical Engineering Education Study Program, 53.6% from the Building Engineering Education Study Program, and 38.1% from the Informatics Engineering Study Program. Based on gender, the respondents involved consisted of 27.7% male students and 72.3% female students. Details of the respondents applied in this study are shown in Table 1.

Table 1. Respondents' descriptive data (N=278)

Attribute	Categories	N	%
Gender	**Male**	**77**	**27.7**
	Female	201	72.3
Degree	1st grade	70	25.2
	2nd grade	29	10.4
	3th grade	47	16.9

	4th grade	132	47.5
Age	18 years old	45	16.2
	19 years old	64	23
	20 years old	60	21.6
	21 years old	68	24.5
	22 years old	35	12.6
	23 years old	5	1.8
	24 years old	1	0.4
Study Program	Mechanical engineering education	23	8.3
	Building Engineering Education	149	53.6
	Informatics and Computer Engineering Education	106	38.1
Family Residence	Urban	65	23.4
	Rural	213	76.6
Reason for college	Personal choice	159	57.2
	Parents' choice	19	6.8
	Advice from the teacher	100	36
Are creative thinking skills required in your area of expertise?	Yes	188	67.6
	No	90	32.4

Students provide information regarding their perceptions of family support, lecturer support, peer support, creative self-efficacy, and creative thinking through the Google Form. Data collection using the self-administered questionnaire technique, which is a data collection method in which respondents fill out questionnaires independently without any direct interaction with researchers or interviewers. This method is often used in surveys and quantitative research because it allows data collection from many respondents in a relatively short time and at a lower cost than face-to-face or telephone interview methods. We developed a social support questionnaire that refers to previous study questionnaires [17]. The family, lecturer, and friend support questionnaire consist of 6 items each (for example, my family/lecturer/friends always make time to make my life easier). Meanwhile, students' perceptions of creative self-efficacy were collected using the questionnaire [56]. The creative self-efficacy questionnaire consists of 6 items (e.g., I know I can efficiently solve even complex problems). And students' perceptions regarding their creative thinking were measured using a questionnaire adapted from [44]. The creative thinking questionnaire consists of fluency (3 items), flexibility (5 items), originality (4 items), and elaboration (5 items). The measurement scale for all variables uses a 5-level Likert scale, namely strongly agree (5), agree (4), neutral (3), disagree (2), and strongly disagree (1).

After the data is collected, first, SPSS 22.0 is used to process the collected data. Second, Amos 18 is used to build a structural equation model (SEM) to explore the relationship between exogenous and endogenous latent variables. Structural equation modeling (SEM) was chosen for this research due to its ability to simultaneously assess complex relationships among multiple variables, including direct and indirect effects. This methodological approach is particularly effective in examining the interplay between social support, creative self-efficacy, and creative thinking among vocational students. SEM allows for the testing of theoretical models that specify how social support from lecturers, family, and friends influences creative self-efficacy, which in turn affects creative thinking outcomes Zhang et al. [72]. Next, we identify the model fit criteria for the model hypothesized in this study. We tested the fit model using the following criteria: Cmin/df = ≤ 5, the goodness of Index (GFI) GFI = ≥ 0.90, Comparative Fit Index (CFI) = CFI ≥ 0.90, Root Mean Square Error of Approximation (RMSEA)= RMSEA ≤ 0.08 [73]. The criteria for testing the hypothesis of this study are that if the significance value is below 0.05, then the hypothesis is accepted [75].

IV. DATA ANALYSIS

1. *QUESTIONNAIRE VALIDITY AND RELIABILITY*

The results of the item validity test for each variable are shown in Table 2. This study used the Pearson Product Moment test (using SPSS 22) to analyze the validity of the items in each questionnaire. In Table 2, all items in the

friend's support, family support, lecture support, creative self-efficacy, and creative thinking questionnaires show Pearson correlation scores ranging from 0.688 to 0.981. This finding means that all questionnaire items are declared valid. In addition, this study uses Cronbach's Alpha Reliability test to test the reliability of the questionnaire. The findings of this study prove that the questionnaire is reliable for measuring friends, family support, lecture support, creative self-efficacy, and creative thinking (above 0.700) [73].

Table 2. Validity and reliability of the questionnaire

Variables	Validity	Reliability
Friends Support	0.847** ~ 0.884**	0.930
Family Support	0.858** ~ 0.901**	0.939
Lecture Support	0.891** ~ 0.927**	0.956
Creative Self-efficacy	0.862** ~ 0.981**	0.945
Creative Thinking	0.688** ~ 0.850**	0.961

note. ** Correlation is significant at the 0.01 level (2-tailed).

2. *CORRELATIONS BETWEEN THE STUDY VARIABLES*

Table 4 displays the bivariate correlations between the different study variables. Positive correlations were found between the study variables in the expected direction. Table 4 shows that there is a strong correlation (>0.500) between lecturer support, friend support, and family support [76]. A strong correlation is also shown in the relationship between creative self-efficacy and creative thinking. Meanwhile, a moderate correlation (.300 ~ .500) is shown in the relationship between creative self-efficacy and social support (support of friends, family, and lecturers). The strong relationship between these variables suggests that they may be related to and dependent on one another so that when one of them changes, it will affect the others as well.

Table 4. Bivariate Pearson correlation coefficients

Variables	Lecture Support	Family Support	Friend Support	Creative Self-efficacy	Creative Thinking
Lecture Support	1.000				
Family Support	.518	1.000			
Friend Support	.595	.559	1.000		
Creative Self-efficacy	.407	.325	.339	1.000	
Creative Thinking	.482	.361	.461	.697	1.000

3. *STRUCTURAL EQUATION MODELING ANALYSIS*

The regression results for the relationship between social support (consisting of the support of friends, family, and lecturers) and creative thinking mediated by creative self-efficacy are depicted in Figure 2. The fit index for the route model shown in Figure 2 is [cmin/df = 4.490, RMSEA = 0.079, CFI = 0.926, GFI = 0.980, TLI = 0.864, AGFI = 0.946, RMR = 0.047]. These numbers show that the model fits the data reasonably well.

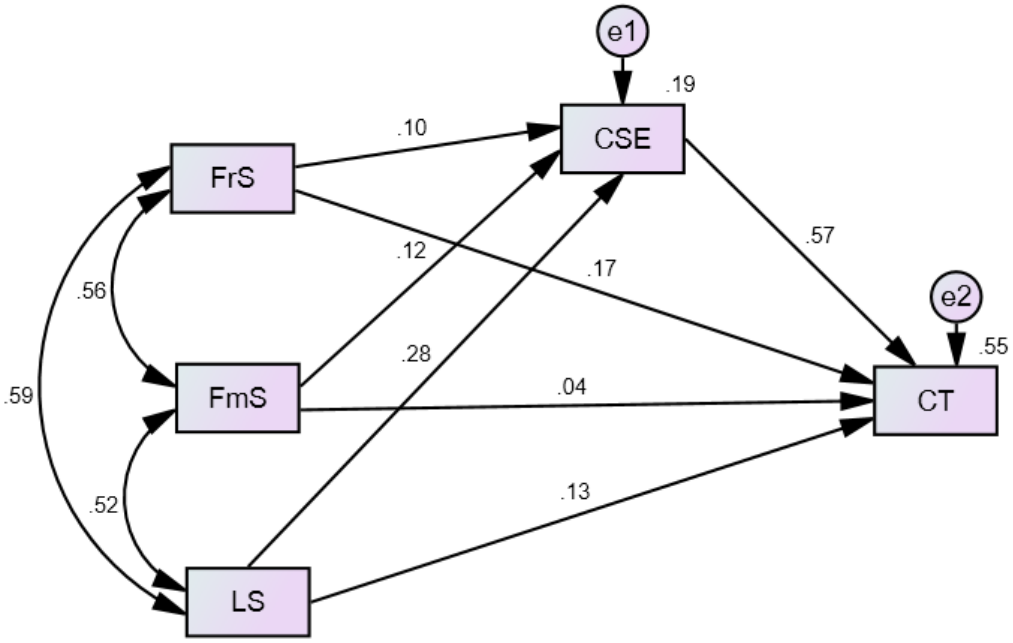


FIGURE 2. SEM analysis results

The hypothesis test of this study using the assumption of acceptance of p-value criteria <0.05. The results of path analysis using SEM to see the direct effect are shown in Table 3. In Table 3, it can be seen that family support has a positive influence on students' creative thinking (estimate = 0.041; p-value = 0.420; the first hypothesis is rejected). In addition, lecturer support (estimate= 0.138; p-value= 0.008; the second hypothesis is accepted) and peer support (estimate= 0.183; p-value= ***; the third hypothesis is accepted) proved to have a positive influence on students' creative thinking.

Meanwhile, creative self-efficacy is directly influenced by lecturer support (estimate= 0.283; p-value = ***; the fifth hypothesis is accepted) and is not directly influenced by family support (estimate= 0.121; p-value = 0.075; the fourth hypothesis is rejected) and friends (estimate= 0.103; p-value= 0.153; the sixth hypothesis is rejected). Another finding is that creative self-efficacy positively influences engineering students' creative thinking (estimate = 0.579; p-value = ***; the seventh hypothesis is accepted).

Table 3. The results of the path analysis among variables (standardized regression weights)

Path Structure	Estimate	S.E.	C.R.	P
FrS → CSE	0.103	0.073	1.429	0.153
FmS → CSE	0.121	0.054	1.782	0.075
LS → CSE	0.283	0.067	4.032	***
FrS → CT	0.183	0.109	3.632	***
FmS → CT	0.041	0.086	0.806	0.420
LS → CT	0.138	0.106	2.651	0.008
CSE → CT	0.579	0.095	13.058	***

Note. *** = Correlation is significant at the 0.001 level; FrS= friends support; FmS = family support; LS= lecture support; CSE= creative self-efficacy; CT= creative thinking

This study also tested the indirect effect of the independent variables on the dependent variable. Creative self-efficacy is a mediator variable that mediates the impact of social support consisting of the support of friends, family, and lecturers. This study uses the estimated bootstrapping confidence interval (200 resample and 90% confidence level) to test the significance of the role of the mediator. The results of the mediation test are shown in Table 4. The findings prove that creative self-efficacy only mediates the effect of lecturer support on students' creative thinking (estimate=0.162; p-value=0.010; the ninth hypothesis is accepted). Meanwhile, creative self-efficacy did not mediate the impact of family support (estimate=0.070; p-value= 0.080; the eighth hypothesis was

rejected) or peer support (estimate=0.059; p-value= 0.260; the tenth hypothesis was rejected) on students' creative thinking.

Table 4. Structural routes and indirect effect (standardized regression weights)

Path Structure	Estimate	LB	UB	P
FrS → CSE → CT	0.059	-0.022	0.133	0.260
FmS → CSE → CT	0.070	0.015	0.135	0.080
LS → CSE → CT	0.162	0.081	0.252	0.010

Note. FrS= friend support; FmS = family support; LS= lecture support; CSE= creative self-efficacy; CT= creative thinking; LB= lower bounds; UP= upper bounds

V. DISCUSSION

This study builds a model for cultivating creative thinking in vocational students at universities by involving the antecedents of social support consisting of the support of friends, family, and lecturers. In addition, this study also places creative self-efficacy as a mediator that mediates the effects of social support on the creative thinking of vocational students at universities. We use structural equation modeling to test the reliability of the structural model in this study.

There are three essential parts to this study; namely, the first is a study of the antecedent factors of creative thinking of vocational students at universities. The findings of this study indicate that only one of three social supports influences students' creative thinking, namely the support of lecturers. These results reinforce previous studies that examined creative thinking in the context of high schools [22, 27] and university students [77]. [72] stated that teacher support can predict students' innovative thinking. In principle, social support is an essential social capital to direct one's level of success [49]. In the context of this study, lecturer support, such as giving time to listen and help students, as well as the attitude of respect from lecturers, is very important to increase students' self-confidence and creative thinking abilities. Support from the teacher can be provided through the learning process in the classroom, which directs students to be actively involved in creative thinking activities. This finding also highlights the importance of lecturers creating a learning atmosphere in the school that activates student cognition to think creatively.

Meanwhile, other sources of support from family and friends have not been able to predict students' creative thinking. This finding contradicts previous studies, which revealed that parental support plays a vital role in individual creative thinking [59]. Other studies also state that family support is crucial in fostering creative thinking [20]. Many factors cause family supports not to have a significant impact on students' creative thinking. For example, due to parental educational background (not discussed in this study), educated parents are more likely to provide positive support related to greater cognitive stimulation than parents with less education [78]. In addition, the low involvement of parents in various supports related to creative thinking activities also contributed to the low impact on increasing student creative thinking. The same thing is also shown in the effect of peer support on students' creative thinking abilities. This study found that peer support was not proven to affect the creative thinking of vocational students at universities. These findings indicate the importance of tertiary institutions developing programs that involve family support, including student parents and peer support, to improve students' creative thinking abilities.

This study also found that creative self-efficacy positively influences the creative thinking of vocational students at universities. This finding is relevant to the study conducted by [30], who mentioned that creative self-efficacy can predict individual creative thinking. Students who have high creative self-efficacy tend to use motivation, cognitive resources, and actions to meet situation needs [68], especially in the process of generating creative ideas [32]. Therefore, students with high levels of creative self-efficacy may be more confident, view obstacles as positive challenges, and be more motivated to overcome them. Actions like that are actions that lead to the ability to think creatively.

In this study context, creative self-efficacy also acts as a mediator. Our findings reveal that creative self-efficacy only significantly mediates the effect of lecturer support on the creative thinking of vocational students at universities. Meanwhile, creative self-efficacy has not been proven to act as a good mediator in other mediation relationships. In addition, consistent with social cognitive theory [29], this study found that the influence of perceived lecturer support on the creative thinking of vocational students at universities is mediated by creative

self-efficacy. Creative self-efficacy is a critical process variable (e.g., motivational beliefs) that explains how lecturer behavior influences students' creative thinking performance [77]. However, this study failed to prove the mediating effect of creative self-efficacy on the impact of perceived friend and family support on vocational students' creative thinking. This is because the support of friends and family since the beginning of this study also proved not to affect students' creative self-efficacy. A lack of positive support from friends and family can encourage students' doubts about their ability to generate creative ideas. Bandura's social cognitive theory (1997), [29] says that personal experience is one of the most important things that influence self-efficacy. So, if the personal experience is negative, then it will have a negative behavioral performance impact, and vice versa.

The findings of this research underscore several practical implications for vocational education, particularly in enhancing creative thinking among students through social support mechanisms. Firstly, the study highlights the importance of fostering a supportive environment that includes lecturer, family, and peer support, which can significantly enhance students' creative self-efficacy and, consequently, their creative output. By recognizing the critical role of social support, educational institutions can implement targeted interventions, such as training programs for lecturers to provide constructive feedback and encouragement, thereby cultivating a more conducive learning atmosphere for creativity. Moreover, the research contributes to the field by providing empirical evidence that social support not only directly influences creative thinking but also operates through the mediating effect of creative self-efficacy. This insight can inform curriculum design and pedagogical strategies, encouraging educators to integrate collaborative learning experiences that promote peer support and engagement. Additionally, the findings advocate for the development of programs that involve families in the educational process, thereby reinforcing the support system that students rely on to enhance their creative capabilities.

VI. CONCLUSION

This study provides new insights into the effect of perceived social support (from friends, family, and lecturers) on the creative thinking of vocational students at universities. Lecturer support is felt to affect the creative thinking of vocational students. Meanwhile, the support of friends and family did not influence students' creative thinking. Another finding is that students' creative self-efficacy is influenced by lecturer support (the support of friends and family does not affect creative self-efficacy). Creative self-efficacy as a mediator only mediates the effect of lecturer support on vocational students' creative thinking significantly, while other relationships do not mediate significantly.

VII. LIMITATIONS AND SUGGESTIONS

The study results are significant for vocational education practitioners to develop students' creative thinking skills at universities by involving essential factors such as social support and creative self-efficacy. This study has several limitations, such as data collected through a self-administered questionnaire which has the potential to be biased from the student's point of view. Therefore, future research needs to involve other respondents, such as lecturers or parents of students.

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Author contribution

All authors made an equal contribution to the development and planning of the study.

Conflict of Interest

The authors declare no conflicts of interest.

Data Availability Statement

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