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The Role of Teacher Interpersonal Behavior on Learning Outcomes in The Cognitive, Affective, and Moral Domains

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ABSTRAK

Kemampuan akademik siswa tidak hanya dipengaruhi oleh kemampuan bawaan siswa tetapi juga dipengaruhi oleh lingkungan belajar yang diciptakan oleh guru.Tujuan dari penelitian ini adalah untuk menguji validitas angket perilaku interpersonal guru yang dirancang oleh peneliti dan untuk mengetahui peran setiap komponen interpersonal guru terhadap perkembangan kognitif, afektif, dan moral siswa. Penelitian ini menggunakan analisis desain faktorial untuk melihat peran keterampilan interpersonal guru terhadap kemampuan kognitif, afektif, dan moral siswa. Partisipan yang terlibat dalam penelitian ini berjumlah 550 siswa SMP. Pengumpulan data dilakukan dengan menggunakan kuesioner untuk menilaian kemampuan interpersonal pengajar, skala laporan pribadi kognitif, skala penilaian afektif, dan skala penilaian moral siswa. Analisis data menggunakan analisis multiple regresi dan analisis korelasi digunakan untuk melihat korelasi antarvariabel tersebut. Hasil penelitian menunjukkan bahwa persepsi siswa terhadap kemampuan interpersonal guru berkorelasi signifikan dengan hasil belajar pada ranah kognitif, afektif, dan moral siswa. Selain itu, skala angket yang dirancang peneliti memenuhi kriteria validitas karena skala angket mampu menjelaskan skala apa yang menjadi prediktor positif dan negatif terhadap hasil belajar siswa pada setiap domain. Implikasinya dalam penelitian ini adalah guru harus menampilkan perilaku interpersonal yang positif selama proses pembelajaran atau interaksi dengan kelas agar proses pembelajaran lebih efektif.

ABSTRACT

Students' academic abilities are not only influenced by students' innate abilities but are also influenced by the learning environment created by teachers. This research aims to test the validity of the teacher interpersonal behavior questionnaire designed by researchers and determine the role of each teacher's interpersonal components on cognitive and affective development and student morale. This research uses factorial design analysis to look at the role of teachers' interpersonal skills on students' cognitive, affective, and moral abilities. The participants involved in this research were 550 junior high school students. Data was collected using questionnaires to assess teachers' interpersonal skills, cognitive self-report, affective, and student moral assessment scales. Data analysis uses multiple regression and correlation analysis to see the correlation between these variables. The research results show that students' perceptions of teachers' interpersonal skills significantly correlate with learning outcomes in students' cognitive, affective, and moral domains. Apart from that, the questionnaire scale designed by the researcher meets the validity criteria because the questionnaire scale can explain what scales are positive and negative predictors of student learning outcomes in each domain. This research implies that teachers must display positive interpersonal behavior during the learning process or interaction with the class so that the learning process is more effective.

1. INTRODUCTION

The interpersonal component of this teacher greatly contributes to student learning processes and outcomes not only contributing to the cognitive aspects, but also contributing to the affective and moral aspects of students in participating in the learning process in class. Behavioral attitudes and communication skills of teachers are considered to be an important part in supporting the effectiveness of the learning process by researchers (Eren & Rakıcıoğlu-Söylemez, 2021; Wang et al., 2023). Students' academic abilities are not only influenced by students' innate abilities but are also influenced by the learning environment

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created by the teacher. The learning environment is defined as the result of the creation of the interpersonal skills of teachers and students in creating a quality learning process (Hadianto et al., 2021a; Widmann & Mulder, 2020). This theory is supported by several previous studies which confirmed that there was a strong and consistent influence of the teacher's interpersonal skills on students' cognitive and affective abilities (Quintelier et al., 2018; Taja et al., 2021). Another study also found that there is a positive relationship between teacher interpersonal and student learning outcomes. A quality learning process is a learning environment that is able to maintain good communication relationships during the learning process (Sun et als., 2018; Telli et al., 2021). The consistency of a positive interpersonal relationship between teachers and students is able to control students' academic abilities from beginning to end (Donohoo, 2018; Patel, 2021).

Measuring the teacher's interpersonal skills is carried out through evaluating dimensions related to the learning environment in the classroom. This dimension refers to teaching concepts that are able to create a positive and conducive learning climate from the beginning to the end of learning, thus creating a quality teaching process (Karjalainen et al., 2021; Nasaescu et al., 2023). This interpersonal ability can be assessed through interactive dialogues and interactive discussions between teachers and students. This concept is derived from the concept of Leary (1957). This concept is used in an educational context to produce an interpersonal teacher behavior model that can be evaluated through a teacher interaction questionnaire (Nasaescu et al., 2023; Scherzinger & Wettstein, 2019). This interpersonal model serves to identify teacher behavior that refers to nearness and influence. Proximity refers to cooperative-oppositional practices and influence refers to relationships of domination and submission. There is a division of eight aspects that explain teacher behavior contained in these two dimensions, namely the ability to lead, facilitate, understanding, responsibility/providing opportunities, uncertainty, dissatisfaction, style of admonition, and strict supervision during the learning process (Karamane et al., 2023; McIntyre et al., 2020). Interpersonal communication is the transmission of messages by one person and the reception of messages by another person or a small group of people, with various effects and with opportunities for immediate feedback (Ghasemi, 2022; Taja et al., 2021).

Interpersonal communication indicates a willingness to share unique aspects of the individual). The phenomenon of dyadic interaction between two people or in small groups that shows natural and unpretentious communication about oneself (Da'as, 2021; Flanagan et al., 2020). Interpersonal communication serves as a tool to influence others. Interpersonal communication between teachers and students themselves helps to form a good learning environment and atmosphere and can encourage student learning motivation, which is an important part of the learning process and improving the quality of learning effective learning in the classroom depends on effective communication it depends on effective communication between teachers and students (Bajovic & Rizzo, 2021; Hadianto et al., 2021b). In the classroom environment, the affective aspects of students have previously been evaluated using attitude scales for several different subjects to determine students' specific motivation in attending classes for each subject, appreciation and motivation, liking, and student attitudes towards other subjects (Nasaescu et al., 2023; Rasooli et al., 2019). The affective aspects of these students include the ability to adopt attitudes from science, motivation and pleasure in attending class, and interest in class. The affective aspects are used to analyze the role aspects of the classroom environment in creating a quality learning process (McIntyre et al., 2020; Oriol et al., 2023). This is reinforced by the role of the teacher which is one component that contributes directly to student learning processes and outcomes.

In this study, expanding the research findings by designing a questionnaire as well as measuring students' affective aspects by assessing students' attitudes toward teachers. In previous studies that examined the classroom environment and student affective, it was found that the quality of this classroom environment has a significant contribution to the positive attitude of students towards their teacher in the classroom (Karamane et al., 2023; Telli et al., 2021). The attitude of students towards the teacher is used as one of the criteria for measuring students' affective abilities as learning outcomes. This aspect became one of the focuses of this study, namely investigating the relationship between the classroom environment and students' affective outcomes as assessed through a teacher interaction questionnaire designed by researchers to describe students' attitudes towards their instructors (Nasaescu et al., 2023; Scherzinger & Wettstein, 2019). Although previous research has mostly examined the cognitive and affective aspects as a result of the teacher's interpersonal skills, little attention has been paid to the moral aspect of learning results (Tang & Walker-Gleaves, 2022; Wong, 2020). The ability of teachers in teaching can be evaluated through various perspectives, starting from the perspective of subjects, learning activities, interpersonal, moral, and teaching organizations. Assessment of the quality of the teaching process from these various perspectives is very important to do both separately and integrated to assess the interconnection of the learning process.

Evaluation of the quality of the teaching process from various perspectives can help us see the contribution of various components of the learning process that support students' understanding of the material (Rose et al., 2023; Schütz & Koglin, 2022). In addition, evaluation from these various perspectives helps researchers in using theory to analyze various teaching functions. This teacher interaction questionnaire was first developed in the Netherlands using Dutch which was designed to assess the teacher's ability to teach Dutch. Furthermore, a simpler questionnaire was developed in America and Australia using a Likert scale and a question range of 50-60 questions. Since then, this questionnaire has been developed by several countries including countries in the Asian region, such as Japan, Korea and Singapore (Demetriou et al., 2023; Sun et al., 2018). In addition, several previous studies have also confirmed the reliability and validity of the teacher interaction questionnaire. Several previous studies used teacher interaction questionnaires, namely research on comparisons of high school and tertiary teacher communication styles using 50 items (Mameli et al., 2022; Rose et al., 2023; Tang & Walker-Gleaves, 2022). Furthermore, a questionnaire is used to identify teacher profiles that refer to students' academic abilities and learning motivation. Both of these studies can be concluded that the interpersonal skills of these teachers contribute to improving the quality of the learning process and student learning outcomes (Park & Hill, 2021; Widmann & Mulder, 2020). Although this teacher interaction questionnaire is widely used in various countries, there is still little research evaluating the quality of the learning process in Indonesia using the teacher interaction questionnaire. The difference between this research and previous research is that this research reveals three aspects of student competence which include cognitive, affective and moral aspects. Apart from that, the research also tested a questionnaire design to assess the role of interpersonal skills in developing students' cognitive, affective and moral abilities. The purpose of this research is the purpose of this study is to test the validity of the teacher interpersonal behavior questionnaire designed by researchers and to investigate the role of each component of the teacher's interpersonal on students' cognitive, affective, and moral development.

2. METHOD

The research approach used is a quantitative approach. This research uses a factorial design analysis method to determine the interpersonal components of teachers on students' cognitive, affective and moral development. This analysis is used to see the components in interpersonal behavior that contribute to the cognitive, affective, and moral aspects of students clearly. The results of the research can be an illustration for teachers of the components of interpersonal behavior that can optimize students' cognitive, affective and moral abilities. In addition, the factorial design analysis is also able to present clearly the components of teaching interpersonal skills that contribute significantly and not to students' cognitive, affective and moral abilities (Ghafarpour & Moinzadeh, 2020; Kosasih et al., 2022). The participants involved in this study were 550 junior high school students who were taken from 20 classes from 10 schools in West Java, Indonesia. These students participated in filling out a questionnaire designed by researchers to reveal their perceptions of the teacher's interpersonal behavior and relate it to students' cognitive, affective, and moral abilities. The composition of the participants involved were 45% male and 55% female. Participants were selected using a purposive sampling text by looking at the proportion of scores from the three subjects, namely mathematics, science and language. The selected students are adjusted according to the proportion between superior and less excellent students in their schools. Assessment of the subject perspective can be used as material for evaluating teacher interpersonal behavior. This perspective analyzes the teaching style of the teacher by assessing the specific situation derived from the subject matter. This perspective is also useful as a supporting material for exploring whether the teacher interaction questionnaire scale associated with the three subjects correlates with student learning outcomes in three aspects (cognitive, affective, and moral).

Data collection was carried out using questionnaires to assess teachers' interpersonal skills, cognitive self-report scales, affective assessment scales, and student moral assessment scales. Data analysis uses multiple regression analysis and correlation analysis is used to see the correlation between these variables. The questionnaire designed based on the theory of interpersonal behavior of the teacher pays attention to several aspects, namely a) the questionnaire consists of 50 items, b) the self-report scale contains academic or cognitive achievement (Student Academic Achievement: cognitive domain) consists of 3 items, c) the pleasure scale in following the lesson consists of 10 items containing science attitudes or the affective domain (Science attitude: Affective Domain), d) the scale containing students' attitudes towards the teacher consists of 7 affective domain items (Attitude towards teachers: Affective domain) and e) The scale that assesses students' attitudes and values delivered by the teacher contains 25 items or moral domains (Moral Domain). Instrument testing with expert judgment is an assessment of articles carried out by experts with doctoral qualifications in the field of learning evaluation. This questionnaire scale has gone

through a small-scale expert and empirical assessment process before being tested again during the study. In addition, interviews were also conducted to confirm students' understanding of the scale used in the questionnaire. The teacher interaction questionnaire scale items are also culturally relevant to Indonesian culture. To ensure that there is no misuse of words that can lead to ambiguous interpretations, discussions between researchers were conducted to describe the sentences on the items. Some minor modifications from the results of this discussion to fix ambiguous sentences. The learning outcomes of students' cognitive aspects were evaluated using self-report evaluation with 3 items that reported the academic achievements of the three subjects (mathematics, science, and language).

The value taken for self-report is taken from the final exam score with a value scale of 0-100. Student learning outcomes in the affective domain are assessed with two scales. The first scale consists of 10 items that measure students' pleasure in following the subject. This scale is adopted from Fraser's Science Attitudes pleasure scale (1978) . This research involved students who were confirmed to be studying all three subjects. So, make sure the item contains the subject being studied to provide responses to the three subjects. Examples of the statement ""Science material makes me bored" or "I am very happy with science material". Students who score high on this scale are students who have a very good level of enjoyment of their subject. The questionnaire adopted from Fraser's pleasure scale does not reduce the essence of the assessment of attitudes (Fan & Wang, 2022; Kikas & Tang, 2019).

The second affective domain learning outcomes assessment is Attitude towards teachers which contains self-development with 7 items. This rating scale asks students' attitudes towards the teacher's interpersonal skills in delivering material in class with a point scale of 0-5 points. One of the statements on this scale is "The teacher is my role model in learning mathematics". Students who score on the second affective domain Students' Attitudes Towards Teachers have a good attitude towards teaching certain subjects. Furthermore, the learning outcomes of students' moral aspects are assessed with 25 items with a 0-5 point scale designed from Students' Learning of Attitudes and Values: Moral Domain) (Cents-Boonstra et al., 2022; Gasser et al., 2022). This scale assesses the attitudes and values that can be obtained from teachers regarding certain subjects. The attitudes and values that are developed are part of the value education promoted in the school curriculum in Indonesia. The attitudes evaluated through this study are honest, courageous, independent, diligent, tolerant, rational, free, appreciative, and optimistic (Karamane et al., 2023; Sun et al., 2018). Students who score high on this moral aspect show an attitude that is able to take a lot of value from the subject and a good attitude towards the teacher.

3. RESULT AND DISCUSSION

Result

First, Teacher Interaction Questionnaire Validation**.** To answer the formulation of the problem the validity of the teacher interpersonal behavior questionnaire designed by researchers, the results of a questionnaire that describes teaching activities in class and intercorrelation patterns obtained from student perceptions are presented in table 1. Based on the results of the analysis, the Cronbach's alpha coefficient on each questionnaire scale is used as a criterion for measuring consistency reliability internal, namely the individual student ability score (550) and the class average score (n per class 40). Individual level scores were above the anlpha value of 0.61, with values of leadership and friendliness in the range of 0.70-0.88. The class level score as a whole is above 0.81 with scores in the range of 0.87 aspects of rebuking -0.98 aspects of leadership, understanding, and dissatisfaction. Overall the alpha scale at the class level is higher than the score at the individual level. This finding also shows that the teacher interaction questionnaire is a reliable instrument and is consistent with previous studies. The ability of the questionnaire to distinguish between classes, the value of $\eta 2$ is sought to find out the approximate correlation between class membership and scale scores. The number of score variants of the teacher interaction questionnaire based on class anxiety is in the range of 0.24 (discipline) to 0.40 (friendly and helpful). This value is significantly significant on the basis of $p = 0.05$ in all classes presented in table 1. The results of this study indicate that the designed teacher interaction questionnaire instrument can be used to analyze differences in student perceptions in all classes. Furthermore, a correlation analysis between questionnaire scales on individual and class level scores was performed to further test the validation of the questionnaire instrument.

Table 1 Cronbach's Alpha Coefficient Value, Mean and Elementary School on the Teacher Interaction Questionnaire Scale

Scale	Items	Alpha (individu), N = 550)	Alpha (class, N = 20)	ANOVA η^2 (individual, N = 550)	Scale mean	Standard deviation
Leadership	7	0.87	0.98	0.38*	16.44	5.30
Helpfulness/friendliness	7	0.88	0.95	0.40*	16.24	5.89
Understanding	7	0.86	0.98	0.35*	16.32	5.53
Student responsibility/freedom	7	0.75	0.91	0.32*	12.45	4.91
Uncertainty	7	0.75	0.93	0.27*	6.63	4.78
Dissatisfaction	7	0.86	0.98	0.30*	6.53	5.41
Reprimand	7	0.75	0.89	0.37*	7.51	4.91
Discipline	7	0.70	0.90	0.24*	9.80	4.82

* p\0.05

The power of the correlation will decrease as the scales are far apart. This also applies vice versa, the opposite scale must have a negative correlation with a high value. Based on the results of the correlation analysis, the scale that has a small difference value explains the circumplex nature of the teacher interaction questionnaire which can explain the validity of the teacher interaction questionnaire instrument. For example, scales that are close together between the friendly/helpful scale and the teacher's understanding scale will have a positive correlation with high scores, then the friendly/helpful scale and student responsibility/freedom will also be positively correlated with high scores on the next scale. Conversely, the diametrically opposite scale correlation between the friendly/helpful and dissatisfaction scales was negatively correlated even though the correlation value at the individual level did not have a higher score than the comparison between the friendly/helpful and reprimanding scales. So, it can be concluded that adjacent scales are positively correlated and opposite scales at the individual level and class averages have a negative correlation which means that the teacher interaction questionnaire instrument meets the validity criteria. The researcher presents the average value and standard deviation in table 1 to explain students' perceptions of interpersonal teachers. From the results of the analysis, the scale of leadership, teacher assistance/understanding, friendliness, and responsibility/freedom of students has a higher average score from another scale. This shows that most of the students have the notion that the teacher has a positive quality of interaction while carrying out teaching activities. Furthermore, the scale scores that appear to be the lowest are on the scale of uncertainty and dissatisfaction, rebuke, and discipline. The standard deviation of students' perceptions shows a fairly high variation with values in the range 3.75-4.99.

Second, the Relationship between Teacher Interpersonal Ability and Learning Outcomes in the Cognitive, Affective, and Moral aspects of students. To answer the second problem formulation of the role of interpersonal skills, a correlation analysis of learning outcomes was carried out with a teacher interaction questionnaire scale. Analysis of the simple correlation coefficient was analyzed to see the role of the teacher interaction scale on learning outcomes both in the cognitive, affective, and moral domains of students. Multiple regression analysis was performed on the teacher interaction questionnaire scale as a predictor and four predictor variable outcome scales. Cronbach's alpha of the three measures of learning outcomes in the three domains is calculated. Based on the results of the analysis, Cronbach's alpha values were obtained for each scale, namely 0.94 on the Students' Attitudes Towards Teachers: Affective Domain scale, 0.93 on the Test of Science Attitudes: Affective Domain scale, and 0.98 on the Moral Domains. The coefficient values on these three scales show that the internal consistency of the three scales has a high internal consistency value. The results of correlation analysis between scales at the individual level and class averages are presented in table 2. This correlation analysis was carried out based on Leary's theory (1957) which states that adjacent scales must have a positive correlation with high scores between scales. Intercorrelation between the teacher interaction questionnaire and learning outcomes showed in Table 3.

Table 2. Correlation Between Teacher Interaction Questionnaire Scales For Each Individual And Class Averages

Teacher Interaction Questionnaire Scale	Correlations							
	1	2	3	4	5	6	7	8
Leadership		0.72***	0.82***	0.31***	0.58***	0.54***	0.50***	0.13**
Helpfulness/friendliness	0.76**		0.80***	0.65***	0.42***	0.56***	0.62***	0.16***

Teacher Interaction Questionnaire Scale	Correlations							
	1	2	3	4	5	6	7	8
Understanding	0.86***	0.95***		0.50***	-0.45***	-0.58***	-0.60***	-0.10
Student responsibility/freedom	0.17	0.70**	0.57*		0.23***	-0.20***	-0.28***	-0.32***
Uncertainty	-0.85***	-0.56*	-0.66**	0.25		0.58***	0.60***	0.02
Dissatisfaction	-0.78**	-0.91***	-0.96***	-0.63*	0.60*		0.73***	0.40***
Reprimand	-0.65*	-0.88***	-0.89***	-0.60*	0.57*	0.93***		0.35***
Discipline	0.30	-0.36	-0.20	-0.78**	-0.40	0.28	0.43	

* p\0.05, ** p\0.01, *** p\0.001

Table 3. Intercorrelation between the Teacher Interaction Questionnaire and Learning Outcomes

Scale	Correlations Cognitive	Attitude towards Teachers	Science attitude	Moral
Leadership	0.36***	0.74***	0.58***	0.53***
Helpfulness/friendliness	0.30***	0.73***	0.60***	0.52***
Understanding	0.34***	0.73***	0.56***	0.57***
Student responsibility/freedom	0.15	0.45***	0.32***	0.35***
Uncertainty	-0.25***	-0.40***	-0.36***	-0.30***
Dissatisfaction	-0.30***	-0.53***	-0.50***	-0.42***
Reprimand	-0.28***	-0.51***	-0.45***	-0.40***
Discipline	-0.03	-0.02	-0.11	-0.05

Furthermore, the results of multiple regression analysis are presented in table 4 to explain the role of the teacher interaction questionnaire scale in predicting student learning outcomes in cognitive, affective, and moral aspects. Based on the results of the analysis, the value of the F ratio explains that the linear combination on the questionnaire scale has a significant correlation with the value of student learning outcomes in cognitive (Student Academic), affective (Students' Attitudes Towards Teachers), and moral (Students' Learning of Attitudes and Values) aspects. The effect size of the three learning outcomes can be seen in the R2 value adjusted according to Cohen's guidelines with a value of 0.14, which means a moderate to high correlation value of 0.27. Next, to further explain the role of teacher interaction on student learning outcomes, an analysis of the standard regression coefficients is carried out which is presented in table 4. Based on the results of the analysis, several findings were found, namely a) a questionnaire scale that describes the positive interpersonal behavior of the teacher is a significant predictor which includes the scale leadership, usefulness/friendliness, understanding and responsibility/freedom. This is different from the scale that shows insignificant negative interpersonal qualities including uncertainty, dissatisfaction, admonishing and discipline scales. Second, a positive interpersonal scale has a positive relationship with learning outcomes, while a negative interpersonal scale has a negative relationship with student learning outcomes. Third, the leadership scale becomes a significant scale for the four learning outcomes.

Table 4. Results of Multiple Regression Analysis of Teacher Interaction Scale On Learning Outcomes (Cognitive, Affective, and Moral)

QTI scale	Cognitive	Attitude towards Teachers	Science attitude	Moral
Leadership	0.24**	0.33***	0.26***	0.20*
	(0.32)	(0.06)	(0.13)	(0.26)
Helpfulness/friendliness	-0.03	0.27***	0.32***	0.04
	(0.30)	(0.06)	(0.11)	(0.25)
Understanding	0.09	0.16**	0.03	0.22**
	(0.31)	(0.06)	(0.14)	(0.27)
Student responsibility/freedom	0.03	0.10*	0.04	0.15**
	(0.30)	(0.06)	(0.13)	(0.26)
Uncertainty	0.03	0.02	-0.02	-0.04
	(0.29)	(0.06)	(0.13)	(0.26)
Dissatisfaction	-0.13	-0.13**	-0.17**	-0.18**
	(0.27)	(0.05)	(0.11)	(0.23)
Reprimand	-0.06	-0.07	-0.02	0.00

QTI scale	Cognitive	Attitude towards Teachers	Science attitude	Moral
	(0.29)	(0.06)	(0.13)	(0.25)
Discipline	0.03	0.10**	-0.03	0.08
	(0.23)	(0.05)	(0.10)	(0.21)
F (df)	12.61 ***	120.56***	53.54***	40.42***
	(8, 661)	(9, 689)	(8, 723)	(9, 624)
Adjusted R2	0.14	0.63	0.42	0.35

Standard errors are in parentheses

Furthermore, uncertainty and reprimand are scales that are not significantly related to one of the domains of learning outcomes. The negative scale that appears to be a predictor that is significantly related to the three aspects of learning outcomes is dissatisfaction. In general, the teacher interaction questionnaire scale is able to provide better predictions of student learning outcomes in the affective and moral domains than in the cognitive domain. From the six scales of the teacher interaction questionnaire, the scales of leadership, usefulness/friendliness, understanding, student responsibility/freedom, dissatisfaction, and discipline proved to be significant predictors in the affective domain of teachers. The leadership, understanding, responsibility/freedom and dissatisfaction scales give a significant effect on the moral domain, and the three leadership, helpfulness/friendly and dissatisfaction scales have a significant impact on attitudes toward science. Finally, the scale that is a significant predictor of learning outcomes in the cognitive domain is the teacher leadership scale.

Furthermore, based on the results of separate multiple regression analysis for each subject, it was found that the scale of the teacher interaction questionnaire varied enough to provide significant predictions on the three aspects of learning outcomes for the three subjects. Broadly speaking, the pattern of each subject is related to the number of variants described in the criterion variable. For example, based on table 4, the number of variants described appears to show a decreasing pattern in the three learning outcomes of 63% (Affective to teachers), 45% (Affective science), 35% (Moral), and 15% (Cognitive). The same pattern can be seen in each subject with separate multiple regressions. Furthermore, the adjusted R2 value for language subjects appears to be in a decreasing pattern with the respective learning outcomes of 70% (Attitude towards Teachers), 53% (Science Attitudes), 45% (Moral), and 25% (Academic). In the Mathematics subject it has a value of 58% (Attitude towards teachers, 32% (Attitude of science), 27% (Moral), and 10% (Academic). Furthermore, in language subjects it has a learning achievement value of 55% each (Attitude towards Teacher), 40% (Attitudes to Science), 33% (Moral) and 28% (Academic). Based on the results of the analysis, it can be concluded that the teacher interaction questionnaire scale is able to explain the large variance in the affective domain (attitudes towards teachers and science attitudes), then followed by the variance in the moral domain, and finally the least variance is the learning results in the cognitive domain.

Discussion

Based on the results of the study, there were several findings indicating that the teacher interaction questionnaire designed by the researcher met the criteria of validity and reliability in the interpersonal context of teachers in Indonesia. The evidence, including statistical intercorrelation data on eight questionnaire scales at the individual and class levels, strengthens the Leary circuit model, which means that the questionnaire instrument is valid (Nasaescu et al., 2023; Sun et al., 2018). Furthermore, the value of η2 on each scale explains the proportion of the variance on the analyzed scale. This confirms that the questionnaire is reliable in significantly differentiating students' perceptions in different classes. The statistical value on the teacher interaction questionnaire scale is in the range (0.24-0.40) in this study higher than previous studies which were in the range 0.15-0.27 in Korea, in the UK it was in the range 0.14-0.39 and in the Netherlands it was in the range 0.13-0.42. In addition, statistical data on the reliability of the alpha scale of the teacher interaction questionnaire can explain the cross-validation that confirms the internal consistency of the teacher interaction questionnaire (Karamane et al., 2023; Nasaescu et al., 2023). The reliability coefficient at the individual analysis level is in the range of 0.68-0.86 which is higher than previous studies in various countries.

Findings about the teacher's interpersonal behavior show that the scales of leadership, usefulness/friendliness, understanding, and responsibility/freedom of students are significant predictor scales for learning outcomes. However, in contrast to the scale of uncertainty, dissatisfaction, reprimanding, and discipline shows a low score on learning outcomes (Marquardt et al., 2021; Tuytens et al., 2020). This finding is in line with previous research conducted in Korea, but the current research found that there are more positive interpersonal behaviors than negative interpersonal behaviors that affect student learning

outcomes (Park & Hill, 2021; Tang & Walker-Gleaves, 2022). Furthermore, based on the results of multiple regression the relationship between the teacher interaction questionnaire and learning outcomes explains that the scale of the questionnaire varies from not very significant in predicting learning outcomes in the cognitive, affective, and moral domains of students (Rose et al., 2023; Scherzinger & Wettstein, 2019). Positive teacher interaction questionnaire scales such as leadership, helpfulness/friendliness, understanding, responsibility/freedom not only act as significant predictors of learning outcomes, but also tend to show a positive relationship with learning outcomes in every aspect (Bajovic & Rizzo, 2021; Demetriou et al., 2023). This is different from the negative interaction questionnaire scale which does not have a significant impact on student learning outcomes in all aspects of student learning outcomes.

This finding indicates that positive teacher interpersonal skills have positive implications. Good teacher interpersonal behavior as well as good student perceptions of teacher interpersonal will have a positive and significant impact on student learning outcomes in various domains of cognitive, affective, and moral learning outcomes (Tang & Walker-Gleaves, 2022; Wong, 2020). From these findings, it can be concluded that there is a significant correlation between the teacher interaction questionnaire scale and learning outcomes in the cognitive, affective, and moral domains. This finding is in line with the theory that interpersonal behavior and students' perceptions of teachers have a significant impact on learning outcomes (Quintelier et al., 2018; Telli et al., 2021). Students' perceptions of teacher attitudes show the highest number of variances in the teacher interaction questionnaire scale with an R2 value of 0.62 with a significant effect size. Furthermore, based on the results of the positive scale analysis, it is a stronger predictor of affective domain learning outcomes for interpersonal behavior than other domain learning outcomes (Donohoo, 2018; Patel, 2021). In addition, the interaction questionnaire scale also has a significant relationship with student learning outcomes in the moral domain with the variant value explained by the teacher interaction questionnaire scale with a value of R2 = 0.34 with a large effect size. The findings of this study strengthen and expand the study of the theory that the interpersonal behavior of teachers does not only have an impact on students' cognitive and affective but also has an impact on student morale (Scherzinger & Wettstein, 2019; Tang & Walker-Gleaves, 2022).

The teacher interaction questionnaire scale is a good predictor of the values and attitudes students can derive from interactions with their instructors. Values education has become a very important part for students to acquire as an internalization process that must be provided by schools through their teachers and can influence student development (Donohoo, 2018; Wang et al., 2023). In addition, the teacher's role in the process of delivering grades is carried out through the interaction of teachers and students in class. Research on values and attitudes learned in the process of teaching or interaction in the classroom raises more of the importance of the process of interaction. Values education in schools is a significant component in the teaching process, therefore the process of interaction between teachers and students must be positive and continuous from beginning to end so that students take value from the teacher's interpersonal behavior (Inda-Caro et al., 2019; Widmann & Mulder, 2020). In the teaching process, students will adopt the values and attitudes conveyed by the teacher when the teacher interacts by showing positive interpersonal behavior such as leadership, understanding and student responsibility/freedom. The research findings provide insight into the types of teacher interpersonal behavior that can enhance values education in the classroom.

This study has several limitations including student learning outcomes which only cover three subjects (science, mathematics, and language) which may not comprehensively represent student cognitive learning outcomes, this research focuses on a quantitative approach to see the role of interpersonal behavior through a questionnaire scale teacher interaction. selection of samples that do not represent schools in each cluster which might influence the results and generalize the conclusions from the findings. Based on the research results, the researcher recommends several things for classroom practice and future research including teachers must be able to display good interpersonal behavior when interacting with students to support the effectiveness of the learning process, teaching values and attitudes indirectly taught through interpersonal behavior to be predictors which is good for learning outcomes in the realm of student morals. In addition, teachers must realize that values education is influenced by students' perceptions of the teacher's interpersonal behavior. Teachers who display positive interpersonal behavior tend to be more successful in teaching students values and attitudes than teachers who display negative interpersonal behavior. Research should be strengthened by a qualitative approach to look at student feedback regarding their views on the teacher's interpersonal behavior scale.

4. CONCLUSION

Findings about the teacher's interpersonal behavior show that the scales of leadership, usefulness/friendliness, understanding, and responsibility/freedom of students are significant predictor

scales for learning outcomes. However, in contrast to the scale of uncertainty, dissatisfaction, reprimanding, and discipline shows a low score on learning outcomes. The implication in this study is that teachers must display positive interpersonal behavior during the learning process or interaction with the class so that the learning process is more effective. The contribution of positive teacher interpersonal behavior does not only contribute to learning outcomes in the cognitive domain, but also in the affective and moral domains.

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