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Factors that Influence Teacher Self-Efficacy in Providing Education in the School Environment

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Abstract. Teacher self-efficacy is considered important and a priority in the learning process. Teachers who do not have self-efficacy have a negative impact and are related to ability. This is an urgent matter to research to find out the influencing factors of ability and self-efficacy in carrying out education in the school environment. The method used is quantitative. Subjects numbered 263 from a population of 30 schools. Data collection techniques using questionnaires. The instruments in the questionnaire are rated on a Likert scale of points 1 to 5 points. Data analysis techniques using Statistics version 25.0 and determining the mean, percentage, and standard deviation as well as inferential analysis are used for regression and correlation. The results and findings show that the level of teacher self-efficacy in implementing education is in the medium category. It was also found that teachers' perceptions of the implementation of leadership were moderate and environmental awareness was also moderate. However, the teacher's attitude in the environment is positive and good. In conclusion, teacher self-efficacy in implementing education must coincide with teacher awareness, teacher perception of leadership, and practice of loving the environment. Recommendations need to further examine teacher self-efficacy in the process towards students in the classroom. This research contributes to providing information about Teacher Self-Efficacy which influences the learning process in schools.

Keywords: Educational Environment, Self-Efficacy, Leadership Attitudes

1. Introduction

Environmental Education was officially introduced with the publication of the Cross-Curriculum Environmental Education Teacher's Guidebook for primary and secondary schools by the Curriculum Development Agency, Indonesian Ministry of Education (Salau et al., 2022; Grosseck et al., 2019). Environmental Education at the PAUD level, this book was published in 2005 (Rimmer et al., 2021). However, the effectiveness of its implementation is still limited and the level of implementation is not evenly distributed between schools (Karlsson et al., 2020; O'Reilly et al., 2018; Himanen & Puuska, 2022). Among the factors that cause Environmental Education to be less successful in being implemented effectively in schools include teachers who do not master the content of Environmental Education subjects, lack of skills and motivation and determination to implement (Remmen & Iversen, 2023; Alalwan et al., 2020; Wahono et al., 2020). Educational Environment. Found that not all teachers used the handbooks provided to teach Environmental Education because the handbooks did not help teachers in implementing Environmental Education activities (Ardoin et al., 2020);Ardoin & Bowers, 2020). Teachers also face limited time constraints to complete the syllabus and a lack of allocation to implement environmental programs/activities (Adebisi, 2022). Thus, this research aims to examine the extent of teacher self-efficacy or teacher ability in implementing Environmental Education teaching in schools. One of the most important attributes that influence teachers in carrying out their duties as teaching staff is their self-efficacy (Yada et al.,

2022); L. Huang et al., 2020). Defines self-efficacy as; "a judgment (judgment) of a person regarding his ability to manage and carry out the actions necessary to achieve the specified performance (Horcajo et al., 2022). Self-efficiency influences performance by increasing effort and persistence. "Individuals with high self-efficiency are more diligent in working and can work for long periods compared to individuals who have low self-efficacy" (Hidayah et al., 2023).

1.1. Problem Statement

Previous research shows that self-efficacy is closely related to the success of a leader individually and as a group (Dan et al., 2018). Other research also says that effective learning has higher teacher efficacy than less effective learning (Supriadi, Udin; Supriyadi, Tedi; Abdussalam, Aam; Rahman, 2020). Someone who has confidence in their ability to do their job is an important thing to explore for the future (Morrell et al., 2020). However, personal characteristics of self-efficacy receive minimal attention, while some research shows that a person's success can be predicted through self-efficacy (Schunk & DiBenedetto, 2021). Teachers with high self-efficacy have more consistency and motivation in the teaching process (Burić & Kim, 2020). In general, teachers who have high self-efficacy are more optimistic about facing problems. Problems faced by teachers can be overcome if they have high self-efficacy. High efficacy is an individual's capital in being effective and producing the desired results. Not only that, self-efficacy is something that a person can emulate through education and adaptation of understanding. Therefore, self-efficacy needs to be considered important and continue to be developed in the educational environment.

1.2. Related Research

Effectiveness in carrying out a teaching activity concerns three main aspects, namely basic knowledge, understanding the field of work, and mastery of appropriate skills (Hainora Hamzah et al., 2022). Basic knowledge consists of the level or levels of knowledge mastered by a school principal together with his teachers which is translated in the form of attitudes and awareness of the environment, while the definition of the field of work is the behavior of the principal and teachers in carrying out their duties. increasing student mastery and application of environmental values in contexts inside the classroom and outside the classroom. Mastery of appropriate skills refers to the teacher's ability to choose direct practical approaches and methods in handling Environmental Education to deliver effective and meaningful learning. Teachers need to identify weak students and action needs to be taken to overcome these problems. School principals need to monitor and supervise teachers' teaching and take appropriate follow-up actions to improve the quality of Environmental Education teaching. The principal as a school leader is seen as having a very important role in determining quality and excellence and is a supporter of the success of a school organization. Schools that achieve high success in academics are led by principals who have effective leadership qualities (Tintoré et al., 2022). Argue that the leadership of a school principal is important because the principal is an individual who is expected to be able to make changes and determine the direction of the school (Tamadoni et al., 2021). School leadership can influence educational effectiveness. The principal's personality is important and must have a positive influence on the school. It must be recognized that the principal plays a role in the effectiveness of the learning process that takes place in the school, including the learning climate for teachers and students, professionalism, as well as teachers' understanding and planning in learning. Even though teacher enthusiasm and the level of concern for the environment are high, the full responsibility of school leaders takes priority in building a dynamic and innovative atmosphere. It can be ensured that leadership has superior self-efficacy in teaching, so students will show good attitudes and motivation. All good schools are guaranteed to have principals with high self-efficacy (Pont, 2020). In general, the responsibility of leaders and teachers is the main key to implementing the curriculum. In this case, it is necessary to assess the level of teacher self-efficacy in the school environment.

1.3. Research Objectives

This research was conducted to identify factors (namely teachers' attitudes and awareness of the environment as well as principals' instructional leadership practices) that contribute to teachers' levels of self-efficacy. Research objectives: To determine the level of teacher self-

efficacy, teacher attitudes, and teacher awareness of the environment, to determine teacher perceptions of the level of learning leadership practices of school principals in implementing environmental education, and to determine the factors that influence teacher self-efficacy in implementing education. environment.

2. Theoretical Framework

2.1. Self-Efficacy and Urgency

Teacher self-efficacy is a person's confidence in understanding and knowledge in achieving the expected results in the learning process in the school environment (Noben et al., 2021; Romijn et al., 2020; Lumbantoruan, 2023). Teachers with high self-efficacy are more willing to accept innovation in the education system (Alshurideh et al., 2020; Jitu Halomoan Lumbantoruan, 2023). High teacher self-efficacy will be the main driver of educational development which will bring the country into the third and very urgent wave of civilization.

2.2. Teacher Commitment

Committed and dedicated teachers also determine whether the teaching and learning process can run effectively. Effectiveness does not only depend on teaching skills but also includes the teacher's attitude and feelings towards his duties (Seufert et al., 2021; Halomoan Lumbantoruan, 2023). Teachers who believe in their abilities will work hard, be committed to their work, and show better work performance (Oke & Fernandes, 2020). They will also always be ready to provide their views and contributions for the benefit of the school. Even highly effective teachers can influence the decisions made by their organizations.

2.3. Change of Attitude

Changing attitudes towards a better and positive direction was also identified as one of the factors influencing teacher self-efficacy in implementing Environmental Education values in schools attitudes shape personal beliefs (Kundu, 2020; Gordon et al., 2023). Self-confidence from the cognitive aspect describes the teacher's thoughts on environmental problems and affective self-confidence describes the teacher's emotions towards environmental problems. Thus, attitudes greatly influence teacher self-efficacy because attitudes reflect the teacher's ability to deal with environmental problems.

2.4. Teacher Awareness

Teacher awareness of the environment is also identified as a factor that influences teacher self-efficacy in integrating environmental education in schools. Awareness is a person's awareness, sense of responsibility, and sensitivity towards their environment in terms of aesthetics, perception, feelings, or a person's response to a thing or problem. Emphasize that environmental education aims to form knowledge about nature and natural systems through research activities and also forms an understanding of the environment, environmental values, and the complex interaction of natural elements with humans (Onopriienko et al., 2021; Ardoin et al., 2020). Meanwhile, environmental education is related to the development of attitudes and values of love for the environment, including elements of human understanding and behavior. It also encourages students to explore personal responses to relationships with the environment and environmental issues by emphasizing personal ethics, responsible nature, and environmental awareness.

2.5. Leadership Factors

In theory, the principal's leadership factors also influence teacher self-efficacy. Good leadership shows a positive influence through activities carried out by schools in increasing the success of the teaching and learning process and developing teacher knowledge and understanding (Gümüş et al., 2021; Hallinger & Kulophas, 2020). The effectiveness and excellence of a school lies in the learning leadership of the principal and this includes the effectiveness of implementing Environmental Education which is closely related to the commitment between the principal and teachers in teaching (Thomaidou Pavlidou &

Efstathiades, 2021;Hallinger & Kovačević, 2019). Environmental activities or programs also need to be implemented to further improve the quality of teaching and the school environment.

3. Method

3.1. Research Design

This research is quantitative research with a descriptive regression and correlation approach (Yao et al., 2022). In this research, the research method used is quantitative by collecting information from the research sample. Sample selection was based on the stratified random sampling method. The number of respondents (n=263) met and exceeded the sample size calculated based on the GPower program, namely 234 people with a value of a = 0.05 (one side), effect size = 0.15 (medium), and actual strength (medium).). actual power or 1 – β) inferential statistical test value 0.95.

3.2. Respondent

The respondents in this research were elementary school teachers and middle school teachers totaling 263 teachers. The population and subjects of this research were teachers from 30 schools, namely teachers in elementary schools and teachers in junior high schools who were chosen randomly. A total of 283 forms were collected, but after review, only 263 sets could be used for analysis purposes. Sample Selection Method. Sample selection was based on the stratified random sampling method. The number of respondents (n=263) met and exceeded the sample size calculated based on the GPower program, namely 234 people with a value of a = 0.05 (one side), effect size = 0.15 (medium), and actual strength (medium). actual power or 1 – β) inferential statistical test value 0.95.

3.3. Data Collection

Equipment. The research instrument in the form of a questionnaire is divided into four main parts. Part A relates to the respondent's background. Part B is divided into 2 categories, namely B1 (teacher's attitude towards the environment) and B2 (teacher's level of awareness towards the environment). The questions in Parts B2 and B3 were adapted from the New Ecological Paradigm scale to measure teachers' attitudes and awareness of the environment (Cheung et al., 2019). Instruments related to attitudes and awareness of the environment each contain 20 questions. Part C is an item that assesses teachers' perceptions of the level of the principal's instructional leadership practices in the implementation of Environmental Education which was adapted from the Principal's Instructional Management Assessment Scale questionnaire (Veletić et al., 2023). The Environmental Education Effectiveness Belief Instrument Questionnaire developed was used to measure the level of teacher self-efficacy toward Environmental Education (Part D) (Chang et al., 2020). This instrument contains two scales, namely the Personal Effectiveness Belief Scale in Environmental Education Teaching and the Environmental Education Teaching Expectation Outcome Scale. All research instruments are suitable for use because Cronbach's alpha coefficient value for the four variables exceeds 0.60. The reliability results obtained for attitude items were 0.882, awareness 0.907, leadership 0.986, and teacher self-efficacy 0.615. In addition to item reliability tests, normality tests were also applied using Kolmogorov-Smirnov and Shapiro-Wilks and Skewness statistics. The reliability results show that the data obtained in this study is normally distributed. Table 1 shows a summary of the instruments used.

Table 1. Summary of instruments used

Instrument	Adaptation of	No. Question	Reliability value
Attitude	NEP	20	.882
Awareness	NEP	20	.907
Leadership	PIMRS	55	.986
Self-Efficacy	EEEBI	23	.615

3.4. Data Analysis

Data analysis. The collected data was entered into a research database using SPSS (Version 25.0) on the Microsoft Windows operating system for analysis purposes. Descriptive statistical analysis is used to measure the mean, standard deviation, frequency, and percentage of data, and inferential statistics is used in this research for regression and correlation methods and presents research findings (DiStefano et al., 2020). The level of teacher self-efficacy and teacher attitudes towards the environment was measured using a five-point Likert scale (Strongly Disagree, Disagree, Not Sure, Agree, Strongly Agree), where the higher the response indicates the higher the level of efficacy and positivity. attitude. The level of teacher awareness of the environment was measured using a five-point Likert scale (Very Unconcerned, Not Concerned, Not Sure, Concerned, Very Concerned), where a high response indicates a high level of awareness. Teachers' perceptions of the principal's level of instructional leadership practice were measured using a five-point Likert scale (Never, Rarely, Once in a while, Often, Very Often), where a high response indicates a high level of leadership practice. Table 2 shows the interpretation of the average score as well as the interpretation scale for attitudes, level of awareness, self-efficacy, and level of learning leadership of the principal.

Table 2. Interpretation of the Average Score and Interpretation Scale of Attitudes, Level of Awareness, Self-Efficacy, and Level of Learning Leadership

Mean score value	Interpretation of attitudes	Interpretation of levels of self-efficacy, awareness and level of instructional leadership
1.00–2.33	Negative	Low
2.34–3.66	Neutral	Simple
3.66–5.00	Positive	Tall

3.5. Validity

Of the 283 forms collected, after review only 263 sets could be used for analysis purposes. From the validation results, the number of respondents n=263 met and was declared valid with a value of α = 0.05 (one side), effect size = 0.15 (medium), and actual strength (medium). actual power or 1 – β) inferential statistical test value 0.95. The instrument used in this research was declared valid, homogeneous normal, and suitable for use as a measuring tool.

4. Findings

4.1. Teacher Self-Efficacy Level

In this study, the results show that teacher self-efficacy in implementing education in schools is in the medium category (M = 3.53, SP = 0.30), these results can be seen in Table 3. In terms of individual beliefs, teaching efficacy in the educational environment is in the category of moderate (M=3.29, SP=0.32). This is inversely proportional to teacher efficacy in achieving learning outcomes and providing expectations which are in the quite high category (M = 3.82, SP = 0.43).

Table 3. Teacher self-efficacy towards the environment

Variable	Level	Frequency (people; n = 263)	Percentage (%)	M	SP
Whole	Low	0	0		
	Simple	196	74.5	3.53	.30
	Tall	67	25.5		
Environmental Education Teaching Personal Efficacy Belief Scale	Low	1	0.4		
	Simple	233	88.6	3.29	.32
	Tall	29	11.0		
Scale of Expected Results of Teaching Environmental Education	Low	0	0		
	Simple	81	30.8	3.82	.43
	Tall	182	69.2		

4.2. Teacher's Attitude towards the Environment

Research findings (see Table 4), also show that teachers' attitudes towards the environment are good and positive (M = 4.22, SP = 0.42).

Table 4. Teacher attitudes towards the environment

Variable	Level	Frequency (people; n = 263)	Percentage (%)	M	SP
	Negative	0	0	4.22	.42
Attitude	Neutral	22	8.4		
	Positive	241	91.6		

4.3. Level of Teacher Concern for the Environment

The level of teacher awareness of the environment in this study was also at a medium level (M = 3.60, SP = 0.58) (see Table 5).

Table 5. Teachers' awareness of the environment

Variable	Stage	Frequency (people; n = 263)	Percentage (%)	M	SP
	Low	6	2.3	3.60	.58
Awareness	Simple	141	53.6		
	Tall	116	44.1		

Teachers' Perceptions of the Level of Instructional Leadership Practices of School Principals in Providing Environmental Education. Leadership in the environmental concept is seen from the perspective of an environmentally conscious leader, namely a leader who has a personality and behavior towards respecting and loving the natural environment. Environmental leadership is an individual who is the leader of a group assigned to guide and coordinate activities related to the environmental field, resolve problems related to the natural environment, and influence the activities of a group that is structured toward determining and fulfilling the goals of the environment, take the effort or initiative to help a group in maintaining and preserving the environment, be a supporter and organizer of the organization's journey towards solving environmental problems and also fulfill the needs of individuals and society so that they are in balance with the needs of the natural environment. Instructional leadership in this study has been adapted to instructional leadership with an environmental concept based on PIMRS. It is divided into three dimensions namely; (i) Dimensions of Defining School Goals and Environmental Goals, (ii) Dimensions of Managing Teaching Programs and Environmental Programs, and (iii) Dimensions of Cultivating a Teaching and Learning Climate for Environmental Education. These three dimensions are then divided into 11 functions:

a. Formulate school academic goals and environmental goals
b. Clarify school goals and environmental goals
c. Observe and evaluate teacher teaching related to Environmental Education
d. Coordination of the Environmental Education curriculum
e. Monitor student academic progress and environmental application progress
f. Control and protect teaching time
g. Providing support in Environmental Education teaching activities
h. Providing incentives for the efforts of teachers who implement environmental programs/activities
i. Foster staff development
j. Establish and enforce academic standards and environmental standards give awards to students

The research findings in Table 6 show that teachers' perceptions of the level of principals' learning leadership practices in implementing Environmental Education are moderate (M = 3.36, SP = 0.77). Teachers' perceptions of the principal's level of instructional leadership practices for Dimension 1 (M = 3.19, SP = .87), Dimension 2 (M = 3.10, SP = .92) and Dimension 3 (M = 3.54, SP = .77) were also moderate.

Table 6. Teachers' perceptions of the level of principals' learning leadership practices in Environmental Education

Variable	Level	Frequency (persons; n = 263)	Percentage (%)	M	SP
Whole	Low	26	9.9		
	Simple	138	52.5	3.36	.77
	Height	99	37.6		
Dimension 1: Understanding School Goals and Environmental Goals	Low	43	16.3		
	Simple	127	48.3	3.19	.87
	Height	93	35.4		
Dimension 2: Program Management Nature Teaching and Programs Around	Low	56	21.3		
	Simple	119	45.2	3.10	.92
	Height	88	33.5		
	Low	19	7.2		
	Simple	111	42.2	3.54	.77
	Height	133	50.6		

In influencing teacher self-efficacy in environmental education at school. The results and findings show that all the factors found are early symptoms of teacher self-efficacy in implementing education (table 7). These factors are teacher awareness of the environment (β= .323, p = .000), teacher perceptions of the principal's learning leadership practices for Dimension 3, namely Cultivating a Teaching and Learning Climate for Environmental Education (β = .298, p = 0.001), teachers' attitudes towards the environment (β = 0.234, p = 0.000), and teachers' perceptions of the principal's instructional leadership practices for Dimension 2, namely Management of Teaching Programs and Environmental Programs (β = –.219, p = .012). This model produces the following regression equation: Y (Teacher's self-efficacy) = 2.349 + .166 (Xkg) + .169 (Xsg) + .116, (Xkd3) – .071 (Xkd2) + e where:

(Xkg)	=	Teacher awareness of the environment
(Xsg)	=	Teacher's attitude towards the environment
(Xkd3)	=	Teachers' perceptions of principals' instructional leadership practices for Dimension 3: Fostering a Teaching and Learning Climate for Natural Education
(Xkd2)	=	Around

As much as 34.4% of the variance in teacher self-efficacy is explained by four independent variables, namely teacher awareness of the environment (Xkg), teacher attitude towards the environment (Xsg), teacher perception of the principal's learning leadership. practice of Dimension 3: Fostering Climate and Environmental Education Learning (Xkd3) and teachers' perceptions of the principal's instructional leadership practices for Dimension 2: Curriculum Management and Environmental Programs (Xkd2).

Table 7. Regression coefficients

Variables	Unstandardized coefficients		Standardized coefficient	*t*	*P*	Collinearity statistics	
	β	Standard error	β			Tolerance	VIF
Constant	2.349	.184		12.740	.000		
Consciousness (Xkg)	.166	.033	.323	4.983	.000	.608	1.645
Attitude (Xsg)	.169	.044	.234	3.859	.000	.694	1.440
Instructional Leadership Dimension 3: Fostering a Teaching and	.116	.033	.298	3.521	.001	.357	2.804

Learning Climate for Environmental Education (Xkd3)							
Instructional Leadership Dimension 2: Curriculum Management and Environmental Programs (Xkd2)	–.071	.028	–.219	–2.537	.012	.344	2.903
R = .586				*F* = 2271			
Squared R² = .344				*p* = .000			
Adjusted R squared =				*n* = 263			

Only 32.9% of the variance in teacher self-efficacy is caused by four variables, namely teacher awareness of the environment (Xkg), teacher attitudes towards the environment (Xsg), teacher perceptions of the principal's learning leadership practices towards the environment. Dimension 3 (Xkd3) and teacher perceptions of the principal's instructional leadership practices for Dimension 2 (Xkd2). There is a positive and moderate relationship between teacher self-efficacy and the four variables, namely teacher awareness of the environment (Xkg), teacher attitude towards the environment (Xsg), perception of the teacher's level of practice towards the environment (Xsg), and perception of the teacher's level of practice towards the environment. the principal's instructional leadership practices for Dimension 3: Cultivating a Teaching and Learning Climate for Environmental Education (Xkd3) and teacher perceptions of the principal's level of instructional leadership practices for Dimension 2: Management of Teaching and Environmental Programs (Xkd2). These findings also confirm the existence of a linear relationship between the dependent variable (teacher self-efficiency) and predictor variables (teacher awareness of the environment (Xkg), teacher attitude towards the environment (Xsg), teacher perception of the environment). the level of the principal's instructional leadership practice for Dimension 3: Fostering a Teaching and Learning Climate for Environmental Education (Xkd3) and teacher perceptions of the principal's level of instructional leadership practice for Dimension 2: Management of Teaching and Environmental Programs (Xkd2). The teacher's environmental awareness factor is the main predictor of teacher self-efficacy (β = 0.323) with the highest t-statistic value (t = 4.983). The second predictor is the teacher's perception of the principal's level of awareness. learning leadership practices Dimension 3: Fostering a Teaching and Learning Climate for Environmental Education (β = 0.298) with a t-statistic value (t = 3.51) The third predictor is the teacher's attitude towards the environment (β = 0.234) with a t-statistic value (t = 3.859). The final predictor is the teacher's perception of the principal's instructional leadership practices for Dimension 2: Management of Teaching Programs and Environmental Programs (β= –.219) with a t-statistic value (t = –2.537). According to Pallant (2001), significant results (p = 0.000, F = 22.371) prove that these factors contribute to efforts to increase teacher self-efficacy in implementing Environmental Education, even though their contribution is small.

5. Discussion

The research findings show that teacher self-efficacy when implementing education in the school environment is in the medium category (M = 3.53, SP = 0.30). In this case, the teacher has shown his professionalism in integrating the values of the school environment into his teaching and learning process. A situation like this shows that teachers have tried hard to explore ways of teaching using effective approaches to implement educational environmental values in schools. The research results also found that teachers are more concerned with the expected teaching results or outcomes than personal factors. Teachers are more effective in producing students who behave well towards the environment but teachers place less emphasis on personal factors or personal factors such as teaching skills. Environmental Education, monitoring environmental activities, being able to answer questions about the environment from students and handling environmental activities. The findings of this research also show that teachers' attitudes towards the environment are good and positive (M = 4.22, SP = 0.42). The teacher has shown a good attitude or behavior towards the environment.

Even though attitudes do not reflect behavior, teachers can think about environmental problems (cognitive), have emotions that are closely related to environmental problems (affective), and take actions related to environmental problems (behavioral). This situation clearly shows that teacher attitudes influence teacher behavior towards environmental problems. The level of teacher awareness of the environment in this study was moderate (M = 3.60, SP = 0.58). This is because there is awareness among teachers of the importance of protecting and preserving the environment. Environmental preservation requires active and positive stimulation so that the awareness shown is realized in self-involved behavior and solving environmental problems together. The results of the research show that teachers' perceptions of the level of principals' learning leadership practices in implementing Environmental Education are moderate (M = 3.36, SP = 0.77). Teachers' perceptions of the level of principal's instructional leadership practices for Dimension 1: Definition of School Goals and Environmental Objectives (M = 3.19, SP = .87), Dimension 2: Curriculum Management and Environmental Programs (M = 3.10, SP = .92) and Dimensions 3: Maintaining a Teaching and Learning Climate for Environmental Education (M = 3.54, SP = 0.77) is also classified as moderate. The principal has practiced instructional leadership in implementing Environmental Education well by showing concern and sensitivity towards the teacher's teaching observation process to ensure that teachers integrate environmental values in the teaching and learning process in the classroom. The school principal also provides support and cooperation to teachers in implementing environmentally patterned activities or programs.

Research findings also show that the factors that influence teacher self-efficacy in implementing Environmental Education are teacher awareness of the environment (β = 0.323, p = 0.000), teacher perception of the school principal's level of awareness. learning leadership practices for Dimension 3: Maintaining a Teaching and Learning Climate for Environmental Education (β = .298, p = .001), teachers' attitudes towards the environment (β = .234, p = .000) and teachers' perceptions of the principal's attitudes towards the level of leadership practices learning for Dimension 2: Teaching Program Management and Environmental Programs (β = –.219, p = .012). Teachers' awareness and attitudes towards the environment as well as school principals' learning leadership practices are one of the challenges for today's teachers in implementing Environmental Education. These factors need to be considered and given attention to increase teacher self-efficacy in implementing the values of Environmental Education. Environmental education is related to the development and value of love for the environment, including elements of knowledge and attitudes (Fu et al., 2020); Prieto-Sandoval et al., 2022). Environmental education encourages individuals to explore personal responses to relationships with the environment and environmental problems by emphasizing personal ethics, responsible nature and environmental awareness. Emphasized that cognitive aspects play an important role in determining self-efficacy, self-regulation, information and shaping individual behavior (Pawlak et al., 2020; (G. Huang & Ren, 2020). Therefore, to ensure the effectiveness of the implementation of Environmental Education, all of these factors need to receive attention so that teachers can be as empowered as possible.

The research results also found that teachers' perceptions of the level of learning leadership practices of school principals in the Environmental Education Teaching and Learning Climate Development Dimension and the Environmental Education Teaching and Learning Program Management Dimension are factors that contribute to teachers' self-efficacy in implementing the Environment. Education. School principals who practice learning leadership are responsible for creating a conducive learning climate as well as planning and managing teaching programs as best as possible to increase the seriousness and motivation of teachers in implementing Environmental Education values in their teaching process. The principal's willingness to accept change can increase the teacher's confidence in his or her ability to succeed in the required tasks. The effectiveness and excellence of a school lies in the learning leadership of the principal and this includes the effectiveness of implementing Environmental Education which is closely related to the commitment between the principal and teachers in teaching. Instructional leadership is an activity carried out by schools to increase the success of the teaching and learning process and school development (Gümüş et al., 2021); Joo, 2020). Environmental activities also need to be implemented to further improve the quality of

teaching and the school environment. Instructional leadership can also increase the motivation and self-confidence of subordinates (followers) toward greater excellence. Become an effective school principal, a school principal must carry out the function of instructional leadership because this leadership influences various aspects of education for the direction of achieving educational goals and vision to form superior and quality leadership patterns by the current world of changes and developments in science and technology (Pellegrini et al., 2020; Agustina et al., 2020). Effective principal learning leadership can increase teacher effectiveness, teacher commitment, teacher satisfaction, and teacher persistence. So instructional leadership based on managing an organization is considered an effective leadership practice. The main challenges to teacher self-efficacy in implementing Environmental Education are the teacher's awareness of the environment (β= 0.168), the principal's learning leadership practices for the Teaching and Learning Climate of Environmental Education (β= .116), and the teacher's attitude toward the surrounding environment (β= .169). Teachers must have a high awareness and positive attitude towards the environment before environmental education can be implemented effectively. School principals should create a learning climate that is conducive to the teaching and learning process of Environmental Education.

6. Conclusion

This research has answered the research objectives by knowing the factors that hinder teacher self-efficacy when implementing education in the school environment. The research results and findings show that the factors that influence teachers' self-efficacy in implementing education in the school environment are awareness and attitudes toward the environment and the positive values of the principal's leadership. This research provides very useful information for the Indonesian Ministry of Education, especially in the field of Curriculum Development in policy-making and considering teacher efficacy factors in updating the curriculum and syllabus in the school environment. This can ensure that education in the school environment can be implemented effectively and can achieve the objectives as stated in the Cross-Curriculum Teacher Guidelines. In this way, the level of teacher self-efficacy in educational learning in the school environment can be achieved, is not considered trivial, and deserves special attention. It is hoped that the information obtained from this research can help increase knowledge, instill awareness, and increase the involvement of school principals, teachers, and students in the application of environmental subjects in schools. It is hoped that this research can contribute useful knowledge as well as enrich and expand research in the field of education in addition to helping and becoming a reference source for other researchers in the future.

Limitation

This research has a weakness, namely that the research does not describe and find in detail the teacher's efficacy toward students during the learning process. Research only finds and shows that the level of teacher self-efficacy in implementing environmental education is on a medium scale. Therefore, all parties need to ensure that teachers can implement environmental education in schools even though it is taught across the curriculum. Teachers should always think positively about all curriculum innovations related to Environmental Education. The application of environmental values should not be considered a burden on the existing curriculum. Furthermore, a positive attitude will produce positive actions, while a negative attitude will produce negative actions. A teacher's positive attitude towards the environment will give birth to positive behavior related to the environment and this is manifested in teaching (through actions and words) inside and outside the classroom. The teacher's attitude can only be changed if a deep awareness arises within the teacher himself. As an educator, the attitudes or actions shown become followers for students. In this regard, teachers can be given motivation, exposure, and knowledge about the importance of protecting and preserving the environment. This aims to enable teachers to change their attitudes by implementing environmentally friendly practices and becoming role models for

students. Among the environmentally friendly practices that teachers can do are turning off light switches and fans when not in use, using handkerchiefs to reduce the use of tissue paper and saving energy, using regular paper clips instead of colored clips because they can cause cadmium poisoning, reusing recycling paper, reducing waste generation by using refillable ink pens and mechanical pencils and maintaining the cleanliness of the school environment by using trash cans. However, with heavy teaching loads and administrative duties, there are times when teachers are forced to focus on more pressing responsibilities and put aside environmental awareness programs. Therefore, this environmental awareness program needs to be monitored from time to time. The success of this program depends on the commitment and creativity of the teachers. They need to be aware of current environmental issues to attract students' interest and focus and may also need an injection of enthusiasm and new ideas. A comprehensive assessment needs to be carried out to determine to what extent the goal of producing quality people and respecting the environment has been achieved. The Ministry of Education and Culture must also think about ways to further strengthen environmental awareness programs among school principals and teachers because as educators they play a role in increasing public awareness that the environment is related to ecosystems and human life.

Recommendation

School principals are also advised to ensure the dissemination of the latest information regarding the environment by holding internal courses from time to time so that the dissemination of the latest information is not interrupted but continues. Principals should encourage course participants to share information with other teachers in the school. Internal courses or in-house training can be held for this purpose so that the latest information can be disseminated to all teachers and is beneficial for schools and students. Courses on teaching planning, selecting appropriate teaching and learning methods, and teaching and learning strategies also need to be held regularly so that teachers receive the latest information regarding the teaching and learning process, especially in efforts to integrate environmental education. although it may take a short time, namely two or three minutes. This is necessary so that teachers know the right time and depth of content so that the knowledge conveyed can be utilized optimally by students. Planning also involves related teaching methods and materials as well as assessment aspects. Spontaneous application can be done especially when the teacher can insert things related to the environment if there is space on the particular topic or topic being discussed. Teachers also need to take the time to be involved in every program or activity related to environmental education at school, such as debates, exhibitions, forums, or essay writing competitions related to the environment. The successful implementation of Environmental Education in the school curriculum is very dependent on the self-efficacy and seriousness of the teacher as an implementer. Teacher attitudes and behavior will then influence student learning. The ultimate goal of Environmental Education, namely producing individuals who behave responsibly towards the environment, is easily achieved if teachers take their educational responsibility seriously.

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Conflict of Interest

There is no conflict of interest between the author and any party in reporting and publishing the results of this research.

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