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Management of Food Security Culturization in Nature Elementary Schools: Policy, Learning, and Student Engagement

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Abstract. Food insecurity affects every aspect of student development. Cultivating food security through education can be implemented through the culturization of food security in nature schools, and it is encouraged to be managed at the elementary level. Research relating to differences in the influence of nature school management on food security has not yet been found. This research aims to analyze the differences in the influence of general and Islamic school management on the culturization of food security. This research used a quantitative approach with a multivariate analysis of variance method using SPSS software. Data were collected using questionnaires of 20 items consisting of three aspects: school policy, learning activity, and student engagement. The participants were 28 principals and representatives in 15 nature elementary schools in West Java Province, Indonesia. The respondents were chosen from a population of nature elementary school principals using purposive sampling. The sampling encompasses the distribution of nature elementary schools based on types of school management and their distributive location. The result of the multivariate test shows a value of 0,260 > 0.05. This result means that different types of school management have an insignificant impact on the culturization of food security. The weakest aspect is school policy, with a mean score of 15.93, while learning activity and student engagement obtain a mean score of 27.25 and 27.50 for each. These findings imply that school policy in nature elementary schools must be improved to support a food security culture.

Keywords: Food Security; Nature Elementary School; School Culture; School Management.

1. Introduction

Food security is a fundamental issue that needs particular attention in education. Food security threats affect physical health and students in every aspect of development, whether in terms of behavior, emotions, or academic achievement at school (Faught et al., 2017; Shankar et al., 2017). Food insecurity is linked to neurological, cardiac, endocrine, and pulmonary problems. Food insecurity also triggers depression, anxiety, difficulty sleeping, impaired cognitive function, and epilepsy (Arenas et al., 2018), which has an impact on students' learning process. Regarding the smooth running of activities at school, the threat of food security is the cause of students' absence from participating in a series of educational processes at school (Coughenour et al., 2021; Tamiru & Belachew, 2017). This cause shows the link between food security and the education process.

The educational process in schools generally takes place conventionally in the classroom. The novel approach to education that takes place outdoors is known as nature school. Nature schools offer a learning culture emphasizing students' learning experiences through exploring and interacting with nature. This concept positively influences students' health and development (Daniati et al., 2019; Harper, 2017). The idea of nature schools, which use nature as the basis for approaches, materials, and learning activities, is a trend that continues to develop in various countries and has become a global education trend (Diani et al., 2023). However, this is inversely proportional to the global food security index, which has recently

declined (The Economist Group, 2022; World Bank, 2023). Indonesia's impact on the hunger index shows that it lags behind countries in the ASEAN region (Grebmer et al., 2023).

Food security in the education sector is pursued through food literacy and the culturization of food security (Holloway et al., 2023). Food literacy includes knowledge about food safety, health, and sustainability (Anis & Norfarizan-Hanoon, 2022). Culturizing food security can be done through developing models of food security behavior through environment-based learning (Sjaifuddin et al., 2019). Environmental-based learning has an approach that is identical to nature schools in terms of its emphasis on learning experiences through exploration and interaction with nature. The nature school learning approach is inquiry in nature using natural resources available around the school environment. With this connection, the culturization of food security in nature schools can help efforts to realize food security through good practices carried out in the educational realm. Especially at the elementary school level, the integration of of nature in education supports better improvement of students' social and emotional quality (Salimi et al., 2021).

However, the culturalization of food security is not immediately realized with the existence of nature schools. Nature school management influences culturization related to food security. The foundation of nature school culture includes management functions such as planning, organizing, and supervising (Laura et al., 2019). These three functions align with management elements, including school human resources (Blanton III & Garcia, 2022). The entire educational process supported by school management, including principals, teachers, and administrators, forms a culture (Deal & Peterson, 2016) that ultimately can support food security through education. In nature schools, efforts to realize food security must be supported by adequate management. In nature school management, nature school planning focuses on students' potential, and the curriculum emphasizes character development. Several school programs are designed to support student activities related to the environment, such as school garden management environmental adaptation, as well as actual work lectures to teach students to survive in nature (Firman et al., 2021; Murwaningsih & Fauziah, 2023).

1.1. Problem Statement

School management influences the effectiveness of achieving the school's vision and mission. In the purpose of cultivating food security, school management needs to be well organized to support food security as reflected through (1) school policies or programs or strategies, (2) learning to strengthen food security, and (3) student participation in food security efforts. These three aspects form a planned and measurable management process to achieve food security. Evaluation of the implementation of food security in nature schools needs to be done by looking at the differences in management processes. The study can be done in Indonesia based on the type of school, namely general and Islamic schools. Analysis of the differences in the influence of school management in the two schools on the culturization of food security is needed to form adequate management.

1.2. Related Research

Previous research on nature school management related to management concepts, curriculum, and nature school models was found to be general (Firman et al., 2021; Ihsan & Irfanuddin, 2022; Murwaningsih & Fauziah, 2023). The study of food security was also found to be less detailed based on a bibliometric review in the United States, United Kingdom, Canada, Africa, and many others with four critical streams of research, such as sustainability and environmental issues, socioeconomic, cultural, and political factors (Akbari et al., 2022). Food security efforts, specifically through education, were found to have been carried out as programs to promote food security for students (Pediatrics et al., 2015). Programs focused on schools include the management of school gardens and the food consumed at school, which affects students' attendance, academic performance, food quality, and food security (Carlsson et al., 2016; Cohen et al., 2021). Other research on food security concerns the nature of the school management process, listing students' emotional connection with nature and food security efforts (Uhlmann et al., 2018). Research that compares the two forms of management in general schools and Islamic schools regarding the culturization of food security has not been found.

1.3. Research Objectives

This research aims to analyze the differences in the influence of school management types, namely general schools and nature schools, on the culturization of food security. With this research, it is hoped that the effectiveness of educational management in nature schools can be improved to support food security. Cultivating food security as part of school culture helps schools realize food security effectively. School culture has proven effective in recognizing the specific goals of the programs carried out at the school (Ismail et al., 2022). In this case, nature school culture in Indonesia consists of two types, namely general schools and Islamic schools. Islamic schools have a religious culture that emphasizes developing students' character based on Islamic values. Nature schools, both general and Islamic schools, have the same approach in terms of character development students' approach to nature.

2. Theoretical Framework

2.1. Nature School Management

Nature schools use natural resources in the school environment as materials and places for learning. The terms used in nature schools vary when related to this concept. There are several other terms besides nature school or nature school, namely forest school, green school, eco-school, and environment-based or nature-based environmental school. Forest school promotes connections between students and nature to improve physical and mental health, such as fear, and environmentally friendly student behavior, such as fostering a sense of belonging and concern for the environment (Cudworth & Lumber, 2021; Harris, 2021). Meanwhile, nature-based environmental education improves students' ecological behavior by increasing their knowledge about the environment and their connectedness to nature (Otto & Pensini, 2017). At the elementary school level, nature-based environmental education improves students' ecological attitudes more effectively than traditional or mediocre instruction (Collado et al., 2020). Furthermore, the similarity between green schools and eco-schools is that the environment is the basis for the educational approach carried out in schools. However, green schools ensure that students are environmentally friendly but not explicitly related to nature (Benyamin et al., 2020). The green school concept, which uses nature as its approach, focuses on learning about nature, using nature, and learning with nature to increase students' sensitivity to the environment (Nurellah et al., 2018). The eco-school concept has the same characteristics related to the environment and nature, focusing on cultivating students' knowledge and skills through integrated activities (Boeve-de Pauw & Van Petegem, 2018).

Nature school management does not only use a nature-based scientific learning approach through the use of nature as space, media, and learning objects. Nature school management also integrates cultural and religious values (Masaong & Tipuwo, 2019). Nature school management also prioritizes character and religious education in the teaching and learning process (Silangen et al., 2021). In nature schools, teachers are placed as learning managers focusing on character education through integrated learning, environmentally friendly learning environments, and inquiry-based learning (Suminar & Desmawati, 2017). At the elementary school level in Indonesia, nature school management adopts the spider web model and the 2013 curriculum model by developing three aspects of management such as planning, implementation, and evaluation (Murwaningsih & Fauziah, 2023). An excellent and structured planning, organizing, directing, and controlling process is the main factor in developing character, logic, leadership, and business in nature schools at the elementary school level (Qibtiah et al., 2018). The nature-based school curriculum prioritizes student freedom, integrating the national curriculum with the nature school curriculum, which consists of four pillars: morality, scientific logic, leadership, and entrepreneurship (Supriyoko et al., 2022)

In summary, nature school management integrates the natural environment and focuses on character education, religious values, educational models, and management functions. Because religious values and character education are in nature school management can be built with different concept perceptions. The differences between general and Islamic schools in this research are the topic of investigation.

2.2. Food Security Culturization

Food security cultivation is an effort to get used to food security through activities carried out repeatedly. This culturization is also known as habituation. However, the culturalization of food security refers to the realization of a school culture that is formed, changed, measured, and consolidated through activities or decisions in the school (Deal & Peterson, 2016). The culturization includes policies, programs, or strategies taken by the school principal as the leader, food-strengthening learning carried out by teachers, and student participation through administrative support or non-teaching personnel as part of school management. Concerning education, culturization is also related to the growth and development of knowledge, skills, and values, which starts by changing the thinking power of students (Blood & Thorsborne, 2005; Serrat, 2017; Walker & Soule, 2017). Culturization of students' mindsets for a long time contributes to the success of efforts to realize food security.

Food security education can begin by considering its impact on students, such as health, academics, and learning (Weaver-Hightower, 2011). Because it is closely related to physical health factors, the culturization of food security cannot be separated from food safety in schools, which can be improved through food safety training, continuous supervision by managers, and the establishment of standard operating procedures that include recommended food safety components based on previous findings (Liz Martins & Rocha, 2014). Additionally, a 1-hour food safety curriculum, including short video modules, activities, and knowledge assessment quizzes, can increase food safety knowledge in K-12 students and university agricultural workers (Dzubak et al., 2016). Furthermore, from the school management side, the school can provide high-quality products that are safe for consumption to ensure students' food security (Bagmut et al., 2022). School gardens can be a tool that plays a role in building food security and equipping students with knowledge, skills, and values related to food (Carlsson et al., 2016). In summary, the cultivation of food security can be integrated into school culture by focusing on the process management aspects carried out by school principals, teachers, and administrators.

3. Method

3.1. Research Design

The focus of the problem raised in this research is how different the influence of school management types, both general and Islamic schools, is on the culturization of food security. A quantitative approach was used in this research with a method of multivariate analysis of variance. According to Hair Jr. et al. (2019), multivariate analysis of variance is a dependent technique for measuring the differences between two or more dependent metric variables based on a set of independent variables that are not numerical. The two dependent variables in this research are general and Islamic schools, the two types of process management involved in nature elementary schools.

3.2. Participant

The population of respondents in this research were all principals in nature elementary schools. The research sample was 28 principals and representatives from 15 nature elementary schools in West Java, Indonesia. The sample was taken using a purposive sampling technique. The selected participants represent the types of school management being conducted and include five regencies and cities in West Java, Indonesia.

3.3 Data Collection

The data collection procedure was carried out in two stages: (1) quantitative and (2) qualitative data collection. From September to October 2023, quantitative data was collected by distributing instruments via questionnaires via Google Forms to school principals, teachers, and administrators in nature schools. From October to December 2023, qualitative data in field observations was carried out in stages for the fifteen nature elementary schools.

3.4 Data Analysis

Data analysis was carried out using multivariate analysis with the help of SPSS software. Normality and homogeneity tests were done before further analyzing the subject's responses to the questionnaire. The normality was tested by seeing the equality of covariance matrices in the multivariate analysis of variance (MANOVA) setting named Box's test (Friendly & Sigal, 2020). The homogeneity was tested by seeing the variance homogeneity test, named Levene's test, as the gatekeeper in analyzing the variance procedure (Derrick et al., 2018). The normality test is presented in Table 1, which shows a significance value of 0.576. The value is more significant than 0.05, which indicates that the data used in this research is normally distributed.

Table 1. Normality Test Results

Box's M	5.953
F	.793
df1	6
df2	745.779
Sig.	.576

The results of Levene's test are presented in Table 2. It shows that the variables of school policy, learning activity, and student engagement as the aspects of food security management in nature elementary schools have a significance value of more than 0.05. These results imply that all the three variables have the same or homogeneous variance. Based on the results of Box's and Levene's tests, the collected data in this research can be further analyzed.

Table 2. Homogeneity Test Results

		Levene Statistic	df1	df2	Sig.
School policy	*Based on Mean*	.184	1	26	.671
	Based on Median	.247	1	26	.624
	Based on the Median and with adjusted df	.247	1	24.873	.624
	Based on trimmed mean	.247	1	26	.623
Learning activity	*Based on Mean*	.628	1	26	.435
	Based on Median	.616	1	26	.440
	Based on the Median and with adjusted df	.616	1	25.264	.440
	Based on trimmed mean	.518	1	26	.478
Student engagement	*Based on Mean*	.016	1	26	.899
	Based on Median	.018	1	26	.895
	Based on the Median and with adjusted df	.018	1	21.889	.895
	Based on trimmed mean	.025	1	26	.875

3.5. Validity and Reliability

The instrument used in this research is a nature elementary school management questionnaire regarding the culturization of food security, which covers three aspects: school policy, learning to strengthen food security, and student engagement in food security efforts. The total number of items in the questionnaire is 21 with the following grid.

Table 3. Questionnaire Instrument Grid

No.	Aspect	Indicator	Item	Total
1		Policies or strategies that encourage food waste reduction.	1	5

No.	Aspect	Indicator	Item	Total
	School policy	Recycling programs for packaging or other materials used in food production or distribution.	8	
		A long-term plan or strategy needed to maintain the sustainability of implementing the 3R principles in food security.	9	
		School policy regarding reducing domestic waste.	12	
		Resource reuse policy in the school environment.	13	
2	Learning activity	Application of the recycling concept in the context of food security.	4	8
		Material about the importance of recycling in maintaining environmental sustainability.	6	
		Learning by utilizing the surrounding environment is effective for strengthening food security materials.	10	
		Utilizing the surrounding environment as a learning resource can provide examples and find concrete facts in food security material.	11	
		Students' practical projects or activities are evaluated and shared with others to inspire the 3R principles.	18	
		The environment around the school provides learning resources that support food security, such as agricultural, fisheries, and plantation areas.	19	
		Rice fields, fisheries, and plantations in the environment outside the school can play a role as learning resources.	20	
		Food-friendly learning is appropriate to the environmental context around the school.	21	
3	Student engagement	Introduction to the impact of waste on the environment and health.	2	8
		An invitation to think creatively in turning used goods into objects.	3	
		Observation of the environment around the school as material for discussion in class.	5	
		Invitation to understand the recycling process and recognize recycled products around the school environment.	7	
		Practical projects or activities that involve students in implementing the 3R principles in schools.	14	
		The importance of the 3R principles is instilled in the school environment.	15	
		Encouragement to share knowledge of the 3R principles with their family and friends.	16	
		Empowerment to apply 3R principles in practical activities in their schools or communities.	17	
Total				21

The validity test of the instrument was carried out using Pearson correlation via SPSS to calculate the correlation between the values obtained from the items in the questionnaire. If the Pearson correlation obtained has a significance value below 0.05 or sig. < 0.05 means the data obtained is valid, and vice versa (Dancey & Reidy, 2020). Based on the analysis of 21 items on the nature elementary school management questionnaire on the culturization of food security, there is 1 item with a significance value above 0.5, namely item 19. Consequently, the item was removed in the further analysis using MANOVA. The validity data for each item in the instrument is explained in detail in the table below.

Table 4. Validity Test Results

Item	Pearson Correlation	Sig. (2-tailed)	Information
1	0.722	0.000	Valid
2	0.796	0.000	Valid
3	0.762	0.000	Valid
4	0.496	0.007	Valid
5	0.591	0.001	Valid
6	0.523	0.004	Valid
7	0.630	0.000	Valid
8	0.586	0.001	Valid
9	0.717	0.000	Valid
10	0.656	0.000	Valid
11	0.728	0.000	Valid
12	0.524	0.004	Valid
13	0.584	0.001	Valid
14	0.756	0.000	Valid
15	0.681	0.00	Valid
16	0.471	0.011	Valid
17	0.548	0.003	Valid
18	0.678	0.00	Valid
19	0.338	0.079	Not Valid
20	0.462	0.013	Valid
21	0.700	0.000	Valid

The instrument reliability test was carried out by looking at Cronbach's alpha. An instrument with a Cronbach's alpha value > 0.70 is reliable (Dancey & Reidy, 2020). The Cronbach's Alpha value for the nature elementary school management instrument on food security is 0.919 > 0.70. This result shows that the instrument is reliable. Based on the results of the validity and reliability test of the instrument, the nature elementary school management instrument for the culturization of food security consists of 20 items based on testing the validity and reliability of the instrument.

4. Findings

This research aims to analyze the differences in the influence of school management types in general and Islamic schools in the culturization of food security. The descriptive statistics of both types of management in nature elementary schools, as presented in Table 5, imply that the general school has a higher mean score than Islamic schools in the three aspects of food security culturization. The mean score for learning and student engagement in general schools is similar, with a value of 27.71. The lower scores are obtained in Islamic schools, with a mean score of 27.25 in learning activity and 27.50 and 26.86 in student engagement. School policy mean score is the lowest in general schools, with a value of 16.19, and in Islamic schools, with a value of 15.14.

Table 5. Descriptive Statistics of Nature School Management

Aspects	Type of Management	Mean	Std. Deviation
School policy	General school	16.19	2.421
	Islamic school	15.14	2.478
	Total	15.93	2.433
Learning activity	General school	27.71	2.432
	Islamic school	25.86	3.185
	Total	27.25	2.703
Student engagement	General school	27.71	2.813
	Islamic school	26.86	2.673
	Total	27.50	2.755

Figure 1 below presents the data distribution from the three aspects of food security culturization. The minimum and maximum scores among school policy, learning activity, and student engagement were compared. The minimum policy score in general schools is 15.098, higher than the aspect of school policy score in Islamic schools, with a value of 13.251. The maximum score of both is closed with a value of 17.282 for the policy aspect in general schools and 17.034 for Islamic schools. Scores In aspects of learning and student engagement are higher than policy. The minimum student engagement score in Islamic schools is 23.818, lower than in general schools, with a value of 26.537. The general school also obtained a higher maximum score of 28.892 compared to 27.896 in Islamic schools. In the learning aspect, Islamic schools obtained a higher maximum score of 29.018 compared to a value of 28.962 in general schools. However, the minimum score for the learning aspect in general schools is higher, with a value of 26.467, compared to Islamic schools, which have a value of 24.694. These findings imply that food security culturization in nature elementary schools obtained higher mean scores in learning and student engagement and the lowest in policy aspects in general or Islamic schools.

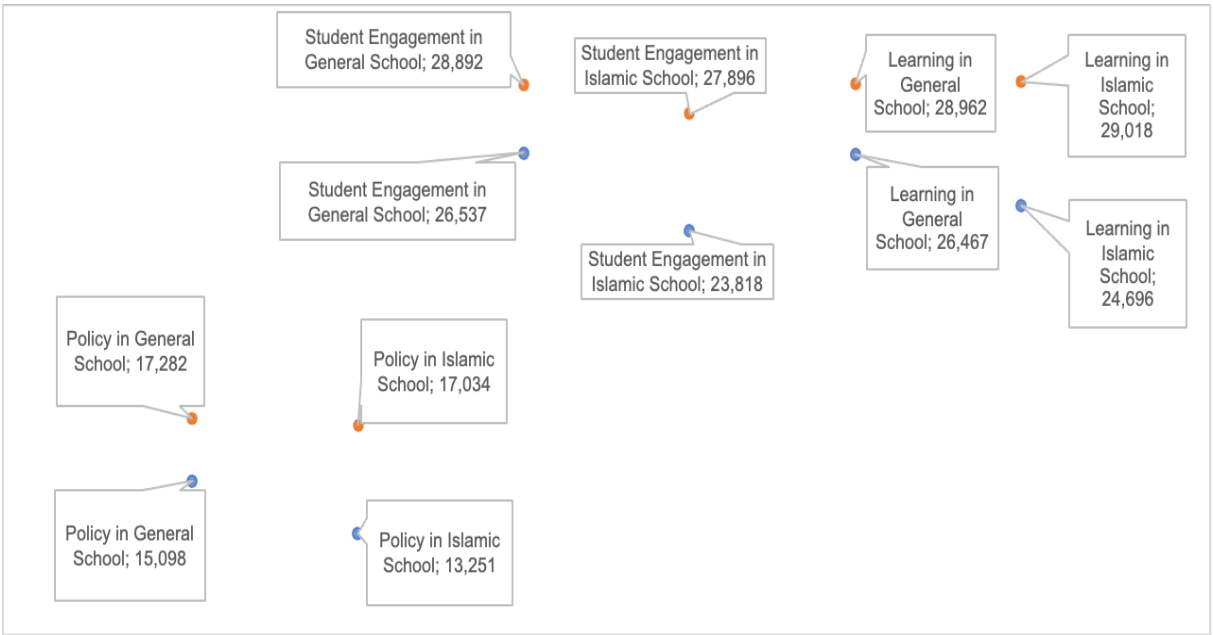

Figure 1. Comparison of Minimum and Maximum Score

The results of the MANOVA analysis show a significance value of 0.260, which means > 0.05. These results indicate that overall, there is no significant difference in the influence of the management of nature elementary schools, both general and Islamic schools, on the culturization of food security. The test results are more fully described in the table below.

Table 6. MANOVA Test Results Between Type of School Management

Effect	*Value*	*F*	*Hypothesis df*	*Error df*	*Sig.*	*Noncent. Parameter*	*Observed Power*
Pillai's Trace	.151	1.425[b]	3.000	24.000	.260	4.274	.329
Wilks' Lambda	.849	1.425[b]	3.000	24.000	.260	4.274	.329
Hotelling's Trace	.178	1.425[b]	3.000	24.000	.260	4.274	.329
Roy's Largest Root	.178	1.425[b]	3.000	24.000	.260	4.274	.329

Test data of the between-subject effect is presented in Table 7. Each of the three significance values in food security culturization is greater than 0.05. The detailed values are (1) 0.333 for school policy, which means that there is no significant difference in aspect of school policy between general and Islamic schools, (2) 0.486 for learning activity, which means that there is no significant difference in aspect of learning activity between general and Islamic school, and (3) 0.117 for student engagement which means that there is no significant difference in

aspect of student engagement between general and Islamic school. This finding means that there are no differences in the management of nature elementary schools, both general schools and Islamic schools, in every aspect of the culturization of food security, namely: (1) school policy, (2) learning activity, and (3) student engagement in food security efforts. The results of further analysis are described in the following table.

Table 7. Inter-Variable Influence Test Results

Dependent Variable	*Type III Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*	*Noncent. Parameter*	*Observed Power*
Policy	5.762	1	5.762	.972	.333	.972	.158
Learning	3.857	1	3.857	.499	.486	.499	.104
Student Engagement	18.107	1	18.107	2.628	.117	2.628	.345

5. Discussion

There is no influence of the type of management of general schools and Islamic schools on the culturization of food security, indicating that the culturization of food security based on school type is not significantly different. The cultivation of food security is not determined by the basis of the approach applied in schools, whether general or based on Islamic values. General and Islamic schools have differences in vision, mission, and the basis for strengthening the social and cultural context to be developed in schools. General schools use national education policy as the basis for curriculum development and several other provisions in the education process, including three aspects: school policy, learning activity, and student engagement, which are carried out in this research. Islamic schools differ from general schools because they focus on Islamic learning and do not just teach about Islam (Mabud, 2018; Susan L. Douglass & Munir Shaikh, 2004). This means that Islamic values in Islamic schools have been integrated into managing the educational process that occurs in schools. In nature schools, the approaches applied by general schools and Islamic schools tend to be the same in terms of culturalization of food security, so the influence of the differences between the two is not significant.

General school management and Islamic school management have the same structure and elements. These elements are the human element and the management of the school goals that have been set. Holistically, both general school management and Islamic school management based on nature schools have a basis of design, management, leadership, and supervision (Deshmukh & Naik, 2010; Laura et al., 2019; Robbins et al., 2013) which strives for every human resource in nature schools to be closer to nature, incredibly nature resources in the school environment. At the nature school level, management includes management as a process and an education activity. In more detail, nature school planning focuses on students' potential, and the curriculum emphasizes character development. Several school programs are designed to support student activities related to the environment, such as school garden management environmental adaptation, as well as actual work lectures to teach students to survive in nature (Firman et al., 2021; Murwaningsih & Fauziah, 2023).

School policy in general and Islamic schools in this research obtained the lowest score among other aspects of management of food security culturization. School policy includes strategies that describe the vision and mission of the nature elementary school, which aims to bring students closer to nature by using natural resources in the school environment as the material and the medium of learning. The school policy being measured in this research are efforts to encourage the reduction of food waste, recycling programs for packaging or other materials used in food production or distribution, long-term plans or strategies to maintain the sustainability of the implementation of the principles of reduction, reuse and recycle (3R) in food security, school policies related to lowering domestic waste, and resource reuse policies in the school environment. Apart from the policies or strategies or programs studied in this research, the use of agricultural land such as school gardens, security monitoring, stability, use and access to food contributes to strengthening a sustainable food system (Pérez-Escamilla, 2017; Walls et al., 2019).

The second aspect of cultivating food security is learning activities to strengthen food security. Learning activity in general schools and Islamic schools studied in this research includes the application of the concept of recycling in the context of food security, material about the importance of recycling in maintaining environmental sustainability, learning by effectively utilizing the surrounding environment to strengthen food security material, utilizing the surrounding environment as a learning resource can provide examples and find concrete facts in food security material, students' projects or practical activities are evaluated and shared with others as an effort to inspire the 3R principles, the environment around the school is available with learning resources that support food security subject matter such as areas of agriculture, fisheries, and plantation; rice fields, fisheries, and plantations in the environment outside the school can play a role as learning resources; and food-friendly learning is appropriate to the environmental context around the school. The learning aspect of food security efforts helps enrich students' knowledge about food security (Adil, 2023). Knowledge is a piece of information that forms students' expectations and perceptions, which become the beginning of an attitude habituation or culturization (de Lange et al., 2018; Ho, 2017).

Student engagement includes an introduction to the impact of waste on the environment and health, an invitation to think creatively about changing used goods into objects, observing the environment around the school as material for discussion in class, an invitation to understand the recycling process and recognize recycled products that are around school environment, projects or practical activities that involve students in implementing 3R principles in schools, projects or practical activities that involve students in implementing 3R principles in schools, awareness of the importance of 3R principles being instilled in the school environment, encouragement to share knowledge about 3R principles with their families and friends, as well as empowerment to apply the 3R principles in practical activities in their schools or communities. Based on previous research, student participation positively influences students' satisfaction, motivation, sense of ownership, skills, competence, knowledge, and personal development (Beck & Reilly, 2017; Griebler et al., 2017). In terms of student participation in the culturization of food security, it is hoped that students' knowledge, skills, and attitudes will show positive behavior in supporting food security.

A positive school culture has a significant impact on students in various aspects. Food security culturization in nature schools is needed to develop knowledge, skills, and attitudes starting from elementary school. The culture in elementary schools has a long-term influence on students and can influence their success in secondary school and at later stages of schooling (Vanwynsberghe et al., 2017). It is essential to pay attention to and assist the development of students at primary school age through supportive education process management in schools. Elementary school students experience rapid physical, cognitive, social, emotional, moral, and religious growth. Activities and cooperative skills influence the development of students at the elementary school level, which is one of the aspects that originate from the environment (Grin, 2021). Environmental factors, as well as experiences and stimulation that influence children's development, can be supported by the implementation of Islamic elementary school management, which, apart from using a nature-based approach in terms of materials, places, and activities, also fosters knowledge, skills, and attitudes that support the culturization of food security.

6. Conclusion

Food security culture at the nature elementary school level develops awareness, knowledge, and habits for students to care about and participate in food security efforts. This development is continuous at the elementary level, impacting students' long-term growth at the higher school level. Nature elementary schools are a means of food security achievement through education that widens the spectrum of effort that can be done at local, national, or global levels. The local context in managing nature schools eases teaching and learning activities directly related to food security in student's lives. The culturization of food security can be carried out through the management of three aspects, namely: (1) school policy, (2) learning activity, and (3) student engagement in food security efforts. The differences between general

and Islamic schools in these three aspects have no significant influence, so the type of nature school management barely affects the culturization of food security. The learning activity and student engagement are well managed in general and Islamic schools. The aspect of school policy needs to be improved in both general and Islamic schools. School policies include planning for implementing 3R principles of food waste reduction, resource reuse policy, and recycling program. Learning to enhance food security initiation uses concepts, materials, and teaching resources that promote food security application. Student participation includes inviting activities to observe and get involved in encouraging and empowering the importance of food security, such as recycling products, taking care of the school environment, sharing knowledge with family and friends, and extending the activities to the nature school and the communities. Food security culturization in nature elementary school is inhibited regardless of whether it is a general or Islamic school.

Limitation

The limitation of this research was the locus area of nature elementary schools identified as the study's primary objective.

Recommendation

Further research should take another locus area with a high number of nature elementary schools and involve both national schools and Islamic schools.

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Conflict of Interest

The Authors do not have a conflict of interest in writing and publishing this study.

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